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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

BULLETIN 459

RESULTS OF SPIRIT LEVELING IN MISSOURI

1896 TO 1909, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER

WORK DONE IN COOPERATION WITH THE STATE OF MISSOURI
FROM 1907 TO 1909, INCLUSIVE

WASHINGTON
GOVERNMENT PRINTING OFFICE
1911

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RESULTS OF SPIRIT LEVELING IN MISSOURI, 1896 TO 1909, INCLUSIVE.

R. B. MARSHALL, Chief Geographer.

INTRODUCTION.

Scope of the work.—All results of spirit leveling in the State of Missouri previously published by the United States Geological Survey and all the results of later work are included in this report, rearranged by quadrangles. All elevations are based on the precise level net as adjusted in 1907 by the Coast and Geodetic Survey to a common mean sea level datum. The part of this net which lies within or along the borders of Missouri comprises the line of the Coast and Geodetic Survey across the State from St. Louis to Kansas City and from Kansas City southward to the southwest corner of the State; the line of the Mississippi River Commission along the eastern boundary of the State; and the line of the Missouri River Commission along the Missouri River from its mouth northwestward to the northwest corner of the State.

Personnel.—The field work previous to 1903 was done under the general direction of J. H. Renshawe, geographer; that from 1903 to 1906, inclusive, under H. M. Wilson, geographer; and the later work under W. H. Herron, geographer, under the general direction of R. B. Marshall, chief geographer. The names of the various levelmen are given in the introduction to each list. The office work of computation, adjustment, and preparation of lists was done mainly by S. S. Gannett, geographer, and D. H. Baldwin, topographer, and since 1907 under the general direction of E. M. Douglas, geographer.

Classification.—The elevations are classified as precise or primary according to the methods employed in their determination. For precise level lines instruments and rods of the highest grade known are used, each line is run both forward and backward, and every precaution is taken to guard against error. The allowable divergence between the forward and backward lines in feet is represented by the formula $0.017\sqrt{D}$, in which D is the distance in miles between bench marks. For primary lines standard Y levels are used; lines are run

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in circuits or are closed on precise lines, with an allowable closing error represented in feet by the formula $0.05\sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given the work to maintain this standard. For levels of both classes careful office adjustments are made, the small outstanding errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I), 3½ inches in diameter and one-fourth inch thick, having a 3-inch stem, which is cemented in a drill hole in solid rock in the wall of some public building, bridge abutment, or other substantial masonry structure. The second form (*F*, Pl. I), to be set in the ground where no masonry or rock is available, consists of a hollow wrought iron post 3½ inches in outside diameter and 4 feet long. The bottom is spread out to a width of 10 inches in order to give a firm bearing on the earth. A bronze or aluminum-bronze cap is riveted over the top of the post. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I), is used for unimportant points. This consists of a special copper nail 1½ inches in length driven through a copper washer seven-eighths inch in diameter. The tablets as well as the caps on the iron posts are appropriately lettered, and where States have cooperated in the work the fact of such cooperation is indicated by the addition of the State name (*G*, Pl. I).

The numbers stamped on the bench marks described in the following pages are the elevations to the nearest foot as determined by the level man. These numbers are stamped with three-sixteenths inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey, at Washington, D. C., for their adjusted values, using the markings as identification numbers only.

Datum.—All elevations taken by the United States Geological Survey are referred to mean sea level, which is the level that the sea would assume if the influence of tides and winds were eliminated. This level is not the elevation determined from the mean of the highest and lowest tides, nor is it the half sum of the mean of all the high tides and the mean of all the low tides, which is called the half-tide level. *Mean sea level is the average height of the water, all stages of the tide being considered.* It is determined from observations made by means of tidal gages placed at stations where local conditions, such as long, narrow bays, rivers, and like features will not affect the height of the water. To obtain even approxi-

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GEOLOGICAL SURVEY BENCH MARKS.

A, Tablet used in cooperating States. The State name is inserted at *G*.
B and *D*, Copper temporary bench mark, consisting of a nail and copper washer.
A, *C*, and *E*, Tablets for stone or concrete structures.
F, Iron post used where there is no rock.

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mately correct results, these observations must extend over at least one lunar month, and if great accuracy is desired they must extend over several years. At ocean stations the half-tide level and mean sea level usually differ but little. It is assumed that there is no difference between the mean sea level as determined from observations in the Atlantic Ocean, Gulf of Mexico, or the Pacific Ocean.

The connection with tidal stations for bench marks in certain areas that lie at some distance from the seacoast is still uncertain, and this fact is indicated by the addition of a letter or word to the right of the word "Datum" on tablets or posts. For such areas corrections for published results will be made from time to time as the precise level lines of the Geological Survey or other government organizations are extended.

Topographic maps.—Maps of the following quadrangles wholly or partly in Missouri have been published by the United States Geological Survey up to April 15, 1911. They may be obtained, except as noted, for 5 cents each, or $3 a hundred, on application to the Director of the Survey at Washington, D. C.

Atchison (Kans.-Mo.).
Atlanta.
Bolivar.
Bonneterre.
Boonville.
Butler.
Carthage.
Clinton.
De Soto.
Edina.
Eldon.[1]
Eureka Springs (Ark.-Mo.).
Farmington.
Fayetteville (Ark.-Mo.).
Forsyth.
Fort Scott (Kans.-Mo.).
Fulton.
Glasgow.
Gravois Mills.[1]
Greenfield.
Harrison (Ark.-Mo.).
Harrisonville.
Hermann.
Higdon.
Independence.
Jefferson City.
Joplin (Kans.-Mo.-Okla.).
Joplin district (Mo.-Kans.-Okla.), double sheet (10 cents).
Kahoka (Mo.-Iowa-Ill.).
Kansas City (Kans.-Mo.).
Leavenworth (Kans.-Mo.).
Lexington.
Louisiana (Mo.-Ill.).
Macon.
Marshall.
Mexico.
Moberly.
Mound City (Kans.-Mo.).
Mountain Home (Ark.-Mo.).
Nebraska City (Nebr.-Iowa-Mo.)
Nevada.
O'Fallon (Mo.-Ill.).
Olathe (Kans.-Mo.).
Oskaloosa (Kans.-Mo.).
Palmyra.
Potosi.
St. Louis (Mo.-Ill.), double sheet (10 cents).
St. Louis, city of (30 cents).
Sedalia.
Springfield.
Stockton.
Sullivan.
Tuscumbia.
Versailles.[1]
Warrensburg.
Warsaw.
Weingarten (Mo.-Ill.).
Wyandotte (Okla.-Mo.-Kans.).
Yellville (Ark.-Mo.).

[1] Eldon and Gravois Mills sheets show parts of Versailles quadrangle on larger scale.

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PRECISE LEVELING.

De Soto, O'Fallon, and Sullivan (30′) Quadrangles and Condray, Knobview, Redbird, and Rolla (15′) Quadrangles.

CRAWFORD, FRANKLIN, AND PHELPS COUNTIES.

The elevations in the following list are based upon the 1907 adjustment elevation of a bench mark of the United States Army Engineers near Labadie, Mo. Precise methods were used, the line being run in both directions. The line begins near Labadie and follows the Missouri Pacific Railway east to Pacific, thence southwest along the St. Louis & San Francisco Railroad to Arlington, a total distance of 99 miles.

The work was done in 1908 by E. L. McNair.

O'FALLON QUADRANGLE.

Near Labadie.

	Feet.
Labadie, 1.1 miles west of, at west end of large rock through cut about 18½ feet lower than track, 1 foot inside wire fence along right of way; United States Army Engineer's bench mark, iron post, top of cap	472.692
Labadie, in front of station; top of rail	495.1

DE SOTO QUADRANGLE.

Gray Summit east along Missouri Pacific Ry. to Pacific, thence southwest along St. Louis & San Francisco R. R. to St. Clair.

Gray Summit, about 55 feet west of station, 26 feet northeast of main track, 6 feet southeast of milepost 41, 25 feet northwest of road crossing; iron post stamped "633"	633.393
Gray Summit, in front of station; top of rail	633.0
Pacific, L. E. Roemer's store on Main Street, two doors east of post office, in southeast corner of foundation; bronze tablet stamped "466"	466.895
Pacific station, about 0.4 mile west of, 55 feet east of center of track of main line St. Louis & San Francisco R. R., 40 feet west of corner of Anton Brandt's house, just outside picket fence, 3 feet southwest of fence corner, 9 feet east of center of highway; iron post stamped "465"	465.249
Pacific, 2.5 miles west of, north side of track, at east end of Meramec River bridge, on top of pier; chiseled square	469.17
Catawissa, in front of station; top of rail	531.2
Robertsville, about 90 feet east of station, 22 feet south of center of track, at fence corner inclosing section house; iron post stamped "515"	504.512
Robertsville, in front of station; top of rail	504.2
Moselle, 2.25 miles east of, about 0.5 mile east of milepost 44, 5 feet east of farm crossing, 10 feet north of center of track; iron post stamped "517"	507.489
Moselle, 65 feet west of station, about 30 feet north of center of track, 2 feet west of telegraph pole; iron post stamped "507"	497.444
St. Clair, 3.1 miles east of, about 470 feet west of milepost 49, 20 feet west of road crossing, at corner of right of way fences; iron post stamped "699"	688.465
St. Clair, northwest corner of North Street and Springfield Road, 2.3 feet from fire hydrant, in pavement; copper bolt stamped "780" (old bench mark)	769.798
St. Clair, in front of station; top of rail	767.7

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SULLIVAN QUADRANGLE.

St. Clair southwest along St. Louis & San Francisco R. R. to Fanning.

	Feet.
Anaconda, in front of station; top of rail	842.6
Anaconda, about 72 feet north of center of track, about 2.5 feet from telephone pole and near fence corner of lot owned by W. M. Daugherty; iron post stamped "851"	840.982
Stanton, in front of station; top of rail	872.5
Stanton, about 60 feet west of station, 60 feet from center of track, in southeast corner of foundation to dwelling house and hotel owned by Joseph Schumke, in corner stone; bronze tablet stamped "882"	872.250
Stanton, 2 miles west of, 100 feet west of road crossing, 2.5 feet inside of right of way fence, 10 feet northwest of telegraph pole; iron post stamped "910"	898.708
Sullivan, about 100 feet east of station, in foundation of Bennett Hotel, at south side of main entrance; aluminum tablet stamped "987"	976.715
Sullivan, in front of station; top of rail	971.0
Sullivan, 3 miles west of, about 35 feet west of road crossing, near milepost 71, 20 feet south of center of track, 3 feet from wire fence; iron post stamped "1035"	1,024.012
Bourbon, in front of station; top of rail	954.6
Bourbon, about 150 feet west of station, 60 feet north of center of track, in corner stone of foundation wall at southeast corner of Bourbon Hotel; old bench mark stamped "967"	956.803
Coffeyton station, opposite semaphore stand, 65 feet west of center of track, 35 feet southwest of oak treee, 1.5 feet from picket fence; iron post stamped "1036"	1,024.823
Coffeyton, in front of station; top of rail	1,023.3
Leasburg, about 35 feet east of station, in west foundation wall of old Exchange Hotel, 2 feet from corner, building owned by W. D. Davis; aluminum tablet stamped "1036"	1,024.870
Hofflin flag station, about 700 feet east of, on south side of track, 6 feet from right of way fence, about 7 feet above track; iron post stamped "1049"	1,037.765
Hofflin flag station, in front of; top of rail	1,039.1
Cuba, in front of station; top of rail	1,015.5
Cuba, southwest corner of foundation of Grand Hotel; aluminum tablet stamped "1045" (old bench mark)	1,035.244
Fanning, in front of station; top of rail	1,059.1
Fanning, 15 feet west of station platform, 15 feet south of center of track, 15 feet north of right of way fence; iron post stamped "1071"	1,060.545

REDBIRD QUADRANGLE.

Fanning southwest along St. Louis & San Francisco R. R. to St. James.

Knobview, 90 feet east of station, about 45 feet south of center of track, 12 feet east of gate at farm road crossing, 2 feet north of right of way fence; iron post stamped "1084"	1,074.125
Knobview, in front of station; top of rail	1,072.2

CONDRAY QUADRANGLE.

St. James southwest along St. Louis & San Francisco R. R. to Rolla.

St. James, in front of station; top of rail	1,089.5
St. James, corner of Meramec and Washington Streets, about 70 feet north of center of track, 25 feet from corner of Commercial Hotel, in angle between cross walk and sidewalk; iron post stamped "1098"	1,087.920

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	Feet.
St. James, 2.5 miles west of, 35 feet east of road crossing, 35 feet south of center of track, 2.5 feet from corner fence post in right of way fence; iron post stamped "1098"	1,087.843
Dillon, in front of station; top of rail	1,093.5
Dillon, 55 feet west of station, 40 feet south of center of railroad track, 2 feet north of right of way fence; iron post stamped "1103"	1,092.670
Dillon, 1.8 miles west of, 65 feet west of road crossing, 10 feet west of telephone pole, 2 feet north of right of way fence; iron post stamped "1185"	1,184.657

ROLLA QUADRANGLE.

Rolla west along St. Louis & San Francisco R. R. to Arlington.

Rolla, on Pine Street, in yard of residence owned by B. L. Knapp, 8 feet west of cement house walk, 4 feet south of public sidewalk; iron post stamped "1130" (originally set as meridian mark)	1,129.566
Rolla, in front of station; top of rail	1,099.0
Rolla, 2.25 miles west of, about 30 feet south of center of track, 6 feet east of corner post of right of way fence, 15 feet east of road at crossing; iron post stamped "975"	975.121
Newburg, 3.5 miles east of, on top of bank of cut, 6 feet above track, 40 feet west of little used public road, 2 feet north of right of way fence; iron post stamped "807"	807.384
Newburg, in front of station; top of rail	711.9
Newburg, 10 feet south of southeast corner of Sullivan House, in line with row of maple trees, about 3 feet from sidewalk; iron post stamped "712"	711.852
Newburg, 1.8 miles west of, about 70 feet west of road crossing, 28 feet south of center of track, 25 feet north of northeast corner of brick building (former storehouse of Ozark Iron Works), 2 feet north of wire fence; iron post stamped "701"	700.897
Arlington, in front of station; top of rail	695.4
Arlington, 0.2 mile west of station, south end of east pier of bridge over Gasconade River, 1 foot south of outside anchor bolt, in capstone; aluminum tablet stamped "687"	686.773

PRIMARY LEVELING.

St. Louis Quadrangle.

ST. LOUIS COUNTY.

The elevations in the following list are based on the "city directrix" or bench mark "K_3" of the Coast and Geodetic Survey at St. Louis, a T cut on the top surface of a pedestal level with the curbstone on Front Street, near Market Street. The elevation of this pedestal, which formerly supported a monument, is now accepted as 413.968 feet above mean sea level, as determined by the 1907 adjustment. The connection with this bench mark was obtained through precise leveling of the city of St. Louis.

The leveling was done in 1903 by L. Scott Smith.

ST. LOUIS QUADRANGLE.

St. Louis west along highway to Barrett, thence south to Valley Park and east via Mehlville to St. Louis.

	Feet.
St. Louis, south side of Manchester Avenue, at city limits, 260 feet west of junction of avenue and Blenton Place; point in square cut in northeast angle of cross on top of city-limit stone 71	482.643

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	Feet.
Kirkwood, southwest abutment of bridge across Missouri Pacific Ry. tracks, south of Main Street; aluminum tablet stamped "648 ST. LOUIS"	647.915
Barret, 1 mile northeast of station, iron bridge over Sugar Creek; center of square cut on southeast abutment	446.52
Fenton, iron bridge over Meramec River; square cut on southwest abutment	423.468
Mehlville, 0.25 mile northwest of, stone culvert on south side of road; aluminum tablet stamped "595 ST. LOUIS"	594.808

Kirkwood north along highway to Dwyers, thence east to St. Louis.

Clayton, courthouse grounds, northwest of courthouse, in large square stone; aluminum tablet stamped "610 ST. LOUIS"	609.259
St. Louis, city bench mark No. 69, city elevation 511.890	511.89

Barret Station north along highway to Fern Ridge, thence east to Strattman and south to Dwyers.

Fern Ridge post office, 0.2 mile east of, at junction of Mason and Olive Streets, on south side, in stone culvert; aluminum tablet stamped "559 ST. LOUIS"	558.913
Creve Cœur post office, 1 mile east of, at road fork to north, just north of telegraph pole, in center of triangle; cross cut on top of section stone	683.25

Fern Ridge northeast along highway to Pattonville, thence east and south to city limits.

Pattonville, 1.6 miles southeast of, northeast abutment of wagon bridge; aluminum tablet stamped "554 ST. LOUIS"	554.09

O'Fallon Quadrangle.

FRANKLIN, LINCOLN, ST. CHARLES, AND ST. LOUIS COUNTIES.

The elevations in the following list are based on the Missouri River Commission bench mark No. 21 at St. Charles. The bench mark is on the north side of Lawrence Street, 25 feet west of the center of Missouri, Kansas & Texas Railway track, in the southeast corner of David Lane's lot, 1 foot west from the fence. It is the top of an iron post over a copper bolt in the bench-mark stone. The elevation is 449.509 feet above mean sea level by the 1907 adjustment.

The leveling in the part of the quadrangle south of the Missouri River was done in the season of 1897 by Jesse L. Holman, and that in the part north of the river in the season of 1898 by Charles La Rue.

O'FALLON QUADRANGLE.

	Feet.
Manchester, SE. ¼ sec. 36, T. 45 N., R. 4 E., near Henry Avenue and Manchester Rock Road; iron post stamped "St. L. 512"	513.538
T. 44 N., R. 4 E., SW. ¼ sec. 5, north of State Road, 500 feet northeast of Mr. Shotwell's log house; iron post stamped "St. L. 739"	740.484
T. 44 N., R. 3 E., SE. ¼ sec. 17, on south side of State Road; iron post stamped "St. L. 670"	671.344
T. 44 N., R. 2 E., NW. ¼ sec. 25, near junction of Manchester Rock Road and road to Pacific; iron post stamped "St. L. 799"	800.774
T. 45 N., R. 3 E., near southwest corner H. Hilkenkamp's store; iron post stamped "St. L. 670"	672.112
Chantilly, T. 49 N., R. 1 E., NE. ¼ sec. 24, northwest corner schoolhouse grounds; iron post stamped "St. L. 634"	635.028

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	Feet.
Troy, in foundation of county courthouse; aluminum tablet stamped "572".	573.219
Moscow Mills, wagon road bridge over Cuivre River, north end of abutment; aluminum tablet stamped "St. L. 461"	462.446
Flint Hill, stone doorsill of stone building owned by Bernard Beller; aluminum bolt stamped "St. L. 551"	552.23
T. 49 N., R. 3 E., NE. ¼ sec. 29, in yard of Smedley district schoolhouse; iron post stamped "St. L. 574"	575.592
T. 44 N., R. 2 E., Vals, foundation of Catholic school building; aluminum tablet stamped "St. L. 518"	518.962
Gilmore, opposite east end of Wabash Railroad station, T. 44 N., R. 2 E.; iron post stamped "St. L. 562"	562.929
St. Peters, T. 47 N., R. 3 E., in parapet wall of west abutment of Wabash Railroad bridge; aluminum tablet stamped "St. L. 445"	446.588
Cottleville, T. 46 N., R. 3 E., foundation of public school building; aluminum tablet stamped "St. L. 516"	517.795
Mechanicsville, T. 46 N., R. 2 E., in yard of Howell Institute building; iron post stamped "St. L. 719"	720.926
T. 45 N., R. 2 E., Missouri, Kansas & Texas Ry. bridge over Little Pemme Osage Creek, north end of east abutment; aluminum bolt stamped "St. L. 462"	463.306
Augusta, SE. ¼ sec. 11, T. 44 N., R. 1 E., 350 feet northwest of German Evangelical Church, in ledge of white limestone rock; aluminum tablet stamped "St. L. 613"	614.417
Dutzow, T. 44 N., R. 1 E., south wall of Wengleford's hardware store; aluminum tablet stamped "St. L. 497"	498.269
Femme Osage, SW. ¼ sec. 20, T. 45 N., R. 1 E., in foundation of German Evangelical Church; aluminum tablet stamped "St. L. 659"	660.469
T. 44 N., R. 1 W., NE. ¼ sec. 24, on land of Charles Birbonne, north side of road from Femme Osage to Mechanicsville; iron post stamped "St. L. 778"	779.550
Coppeln, SW. ¼ sec. 5, T. 45 N., R. 1 E., in stone doorsill of brick store building; aluminum bolt stamped "St. L. 829"	829.943
T. 48 N., R. 1 W., NE. ¼ sec. 25, on land owned by Elizabeth Condor, west side of north-south wagon road; iron post stamped "St. L. 532"	533.527
T. 46 N., R. 1 W., SE. ¼ sec. 1, 3 miles south of Foristell, on north side of road; iron post stamped "St. L. 745"	745.952
T. 47 N., R. 1 W., SE. ¼ sec. 24, north wall of stone box-culvert under Wabash R. R. track, 0.25 mile west of Foristell; aluminum bolt stamped "St. L. 695"	696.432
Dardenne, sec. 2, T. 46 N., R. 2 E.; cross mark cut on west end of upper stone step of Catholic Church	619.19

De Soto Quadrangle.

FRANKLIN, JEFFERSON, AND WASHINGTON COUNTIES.

The elevations in the following list are based on that of a bronze tablet stamped "508," in the foundation of the opera house building at De Soto. The initial height on which the leveling in this locality rests is a level bench mark at De Soto, connected with the Mississippi River Commission bench mark "45/3" at Riverside, Mo. From these data the elevation of the central datum point is accepted as 508.971 feet above mean sea level.

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The leveling was done by A. F. Montmorency and C. H. Dana in 1896.

Owing to excessive errors in closure of circuits the elevations given in this list are only approximate, excepting for the bench marks at Pacific and St. Clair, which were included in the precise leveling done in 1908.

DE SOTO QUADRANGLE.

Jefferson County.

	Feet.
T. 43 N., R. 5 E., NE. ¼ sec. 7, on Gravois Road 3 miles north of High Ridge, at junction of road to Valley Park; iron post stamped "714"	714.706
High Ridge, SE. ¼ sec. 14, T. 43 N., R. 4 E., on road opposite post office; iron post stamped "926"	927.296
House Springs, NE. ¼ sec. 4, T. 42 N., R. 4 E., on north end of east abutment of bridge across Hedge Creek; bronze tablet stamped "465"	466.536
T. 42 N., R. 5 E., SE. ¼ sec. 18, 200 yards south of St. Paul's Church on road from House Springs to Antonia; iron post stamped "881"	882.164
Byrnesville, sec. 12, T. 42 N., R. 3 E., near center of southwest abutment of iron bridge over Big River; copper bolt stamped "459"	460.433
Bellows Creek post office, SW. ¼ sec. 10, T. 41 N., R. 4 E., iron post stamped "708"	709.485
Jarvis post office, 175 feet south of, SE. ¼ sec. 19, T. 41 N., R. 5 E., in rock on road; copper bolt stamped "530"	531.435
Morse Mills, in north abutment of bridge over Big River; bronze tablet stamped "494"	495.389
Hillsboro, sec. 3, T. 40 N., R. 4 E., in corner stone of county courthouse; bronze tablet stamped "801"	802.677
Ware, near post office, about center of sec. 11, T. 40 N., R. 3 E., in sandstone ledge on north bank of Dry Creek; copper bolt stamped "552"	552.646
T. 40 N., R. 5 E., northeast corner of sec. 19, 1 mile north of Victoria Station, in north abutment of bridge 28, on St. Louis, Iron Mountain & Southern Ry.; copper bolt stamped "451"	451.862
De Soto, southeast corner of foundation of opera house building; bronze tablet stamped "508"	508.971
Valles Mines station, 50 feet east of station, near center of sec. 5, T. 38 N., R. 5 E., iron post stamped "745"	745.934
T. 43 N., R. 3 E., near center of sec. 27, near Wilson's house, on rock on road from Pacific to Byrnesville; copper bolt stamped "479"	479.793
T. 39 N., R. 5 E., near southeast corner of sec. 30, on ledge of rock 300 feet east of Coles Mill, 2.5 miles northwest of Valles Mines station; copper bolt stamped "646"	647.437

Franklin County.

T. 43 N., R. 1 W., SW. ¼ sec. 26, 0.5 mile east of Union, on capstone of southeast corner of stone bridge over Flat Creek; bronze tablet stamped "516"	516.811
T. 43 N., R. 1 E., SW. ¼ sec. 16, 4 feet south of Coast and Geodetic Survey monument "Halleck"; iron post stamped "789"	790.242
Pacific, in northeast corner of sec. 12, T. 43 N., R. 2 E., southeast corner of foundation of L. E. Roemer's store on Main Street, two doors east of post office; bronze tablet stamped "466"	466.895
T. 42 N., R. 1 E., near center of sec. 26, 3.5 miles southeast of Moselle on main road to Grubville, templet of northwest abutment of iron bridge over Meramec River	508.0

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	Feet.
T. 41 N., R. 1 W., 6 feet south of northwest corner of sec. 1, in rock west of road; copper bolt stamped "699"	699.684
St. Clair, 200 feet north of station, near northwest corner of sec. 36, T. 42 N., R. 1 W., corner stone of curb on southeast corner of Frederick Augerer's store; copper bolt stamped "769"	769.798
T. 41 N., R. 1 E., NW. ¼ sec. 1, 15 feet east of spring at S. H. Dixon's place, in rock; copper bolt stamped "515"	515.714
Grubville post office, near, NW. ¼ sec. 23, T. 41 N., R. 2 E., in southeast corner of yard of Dr. Davis's house; iron post stamped "908"	908.625
T. 41 N., R. 2 E., near southeast corner of sec. 32, in root of tree at forks of road; nail	803.1
T. 42 N., R. 2 E., near southwest corner of SW. ¼ sec. 26, on road from Robertsville to Grubville, at fork to Catawissa; iron post stamped "787"	787.98
Washington County.	
Richwoods post office, near center of south side of crossroads, in root of walnut tree; nail	823.470
T. 40 N., R. 1 E., NW. ¼ sec. 23, 50 yards west of road from Richwoods down Indian Creek and 75 yards east of Flannigan's house, in ledge of rock on west bank of Little Indian Creek; copper bolt stamped "637"	637.719
Hulsey post office, 80 feet east of, near northwest corner of SW. ¼ sec. 36, T. 40 N., R. 1 W., in rock; copper bolt stamped "631"	632.543
T. 39 N., R. 1 W., near southeast corner of NE. ¼ sec. 22, 60 feet northeast of barn on J. B. Muerhaney's farm, in flat rock; copper bolt stamped "761"	762.306
T. 38 N., R. 1 W., near southwest corner of NW. ¼ sec. 1, 40 feet south of J. W. Boyd's house, in rock; copper bolt stamped "830"	831.313
Troutt post office, northeast of, near northeast corner of sec. 35, T. 39 N., R. 1 E., at forks in roads, in rock; copper bolt stamped "1079"	1,081.872
Richwoods post office, 2 miles south of, on road from Richwoods to Old Mines, in crossroads; iron post stamped "851"	852.997
Fourche a Renault post office, 250 feet west of, near center of sec. 13, T. 38 N., R. 1. E., near big spring; iron post stamped "709"	710.245
Old Mines post office, north end of lower step at gate to Catholic Church; copper bolt stamped "820"	820.729
T. 38 N., R. 3 E., SE. ¼ sec. 4, at fork in road to Fillmore, 2.5 miles southwest of Fertile post office, in sandstone rock on east side of road from Fertile to Old Mines; copper bolt stamped "913"	913.991
Fertile post office, 60 feet south of, sec. 27, T. 39 N., R. 3 E., side of top step of doorsill at Higginbotham's house; bronze tablet stamped "763"	764.460
T. 38 N., R. 4 E., NE. ¼ sec. 7, north abutment of St. Louis, Iron Mountain & Southern R. R. bridge 46, 0.8 mile south of Blackwell station; copper bolt stamped "594"	594.910

Berryman, Bonneterre, Crystal City, Farmington, and Potosi Quadrangles.

JEFFERSON, ST. FRANCOIS, STE. GENEVIEVE, AND WASHINGTON COUNTIES.

The elevations in the following list are based on the Mississippi River Commission bench mark "45/3" at Riverside, which is situated 2,378 feet (725 meters) south of the station, on the north bank of the second creek below the station, 114.8 feet (35 meters) from the river shore, on land of Mr. Parsons. The bench mark is a stone post under a sycamore tree; its elevation by the 1907 adjustment is 401.524 feet above mean sea level.

The leveling was done in 1903 and 1904 by D. V. Vandiver.

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CRYSTAL CITY QUADRANGLE.

Riverside southwest along Mississippi River & Bonne Terre Ry. to Valles Mines (double-rodded line).

	Feet.
Riverside, 2,378 feet south of station (Mississippi River Commission bench mark), on north bank of second creek below station, 114.8 feet from Mississippi River shore, on land of Mr. Parsons; stone post set under sycamore tree	401.524
Herculaneum, on northwest stone pier of stone bridge; cross	409.62
Genevieve, northeast side of station, east of railroad; chisel mark on ledge of sandstone	444.60
Valles Mines, 45 feet southwest of station; iron post stamped "745"	746.084

BONNETERRE QUADRANGLE.

Valles Mines south along Mississippi River & Bonne Terre Ry. to Bonne Terre (single line).

Silver Springs, in northwest abutment of stone of trestle 38, 300 feet north of station; aluminum tablet stamped "824"	825.813
Bonneterre, on southeast corner of station platform	829.77

Bonneterre south along Mississippi River & Bonne Terre Ry. to Elvins.

Bonneterre, in east face of southeast corner of foundation of station; bronze tablet stamped "829"	830.248
Bonneterre, in front of foundation of Farmers and Miners Bank; aluminum tablet stamped "824"	825.810
Elvins, in southeast corner of foundation of white building 40 feet west of tracks; aluminum tablet stamped "765"	766.347

Bonneterre west along Chat Road to Hopewell; thence southwest to Bismarck; thence along St. Louis, Iron Mountain & Southern Ry. to Doe Run Junction; thence along Mississippi River & Bonne Terre Ry. to Elvins; thence west along Illinois Southern Ry. to Bismarck.

Bonneterre, 3.5 miles west of, on Chat Road, 300 feet north of spring, 100 feet from fork, in ledge of stone at forks; bronze tablet stamped "905"	906.817
Hopewell, 600 feet west of railroad track, 300 feet south of post office, in foundation of stone surrounding big spring; aluminum tablet stamped "858"	859.018
Irondale, in column stone of Irondale Bank, right of entrance; aluminum tablet stamped "810"	811.293
Bismarck, in front of Bismarck Bank, left of entrance; aluminum tablet stamped "1028"	1,029.855

Bonneterre northwest along highway to Cadet; thence southwest along St. Louis, Iron Mountain & Southern Ry. to Mineral Point; thence along highway south to Hopewell.

Bonneterre, 6.5 miles west of, 30 feet above ford of Three Hills Creek, on east side, 4 feet above edge of water, in ledge of stone; bronze tablet stamped "678"	679.676
Mineral Point, 600 feet south of station, in southeast abutment stone of bridge over Mill Creek; bronze tablet stamped "854"	855.145

Hopewell south along highway to Caledonia, thence east to Bismarck.

Caledonia, in front of Methodist Church, in large sandstone step; aluminum tablet stamped "923"	924.411
Irondale, 4.5 miles southwest of, 90 feet southwest of forks, on top of hill, in flint stone; bronze tablet stamped "1104"	1,105.581

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FARMINGTON QUADRANGLE.

Elvins east along Illinois Southern Ry. via Farmington Junction to Weingarten.

	Feet.
Elvins, in foundation stone at southeast corner of white building 40 feet west of the Mississippi River & Bonne Terre Ry. tracks; aluminum tablet stamped "765"	766.347
Farmington Junction, in southeast corner of foundation of station; bronze tablet stamped "955"	956.489

Plank road crossing near Jonca Creek (on Illinois Southern Ry.) southwest via Farmington to Doe Run Junction.

Jonca Creek, 2.5 miles south of railroad crossing plank road, in northeast corner abutment stone of iron bridge; aluminum tablet stamped "760"	760.951
Valley Forge, in northeast corner abutment stone of Wolf Creek bridge; bronze tablet stamped "853"	853.888
Farmington, in south front of foundation of courthouse, west side of entrance; aluminum tablet stamped "917"	918.641

Crossing 2 miles west of Sprott (on Illinois Southern Ry.) north along highway to Jaydee post office, thence west to Bonneterre.

Salem Church, in southwest corner of stone foundation; bronze tablet stamped "834"	835.051
Jaydee post office, opposite, in southeast corner of foundation of N. Chatman's house; bronze tablet stamped "804"	805.368
Bonneterre, Farmers and Miners Bank, in foundation stone; aluminum tablet stamped "824"	825.809

Plank road fork 5 miles east of Farmington east to Oak Grove schoolhouse, thence northeast and northwest to plank road crossing at 17-mile Rock.

Pickle, 0.9 mile east of, northeast corner of Oak Grove schoolhouse; bronze tablet stamped "1053"	1,053.725

Hickory Creek northwest along road via Lawrenceton to French Village, thence south to Jaydee.

Lawrenceton, 250 feet west of church, 100 feet north of road, in limestone outcrop in small branch; aluminun tablet stamped "561 ADJ 1903"	562.076
French Village, in southeast corner of foundation of spring house; bronze tablet stamped "898"	899.392

POTOSI QUADRANGLE.

Mineral Point west along highway to Potosi, thence northwest to Pleasant Grove, thence north to Fourche a Renault.

Potosi, in south foundation of courthouse, 5 feet west of front door, 3.5 feet above ground; aluminum tablet stamped "904 ADJ 1903"	905.065
Pleasant Hill (Grove) church, in southeast corner of foundation stone, 1.5 feet above ground; aluminum tablet stamped "816 ADJ 1903"	817.829

Pleasant Grove west along highway to Little Pilot Knob, thence southeast to Belgrade, thence east to Caledonia, thence north to Potosi.

Latty, 1.4 miles southwest of, 1,000 feet west of Fourche a Renault Creek, 70 feet west of spring house, opposite Henry Smith's house, in ledge of natural stone; aluminum tablet stamped "Prim. Trav. Sta. No. 79, 790 ADJ 1903"	791.122
Floyd, 2.5 miles northwest of, 1 mile southwest of Knob, Little Pilot Knob primary traverse station No. 167, in large porphyry bowlder; aluminum tablet stamped "1243 ADJ 1903"	1,244.150

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	Feet.
Floyd post office, in east foundation stone of Earles's house, 4 feet west of corner of front porch; aluminum tablet stamped "877 ADJ 1903"	878.422
Shirley, 300 feet southwest of store, 150 feet east of Berryman Road, at northwest corner of barn, in natural sandstone bowlder; aluminum tablet stamped "941 ADJ 1903"	941.751
Potosi, 8 miles southwest of, 1,500 feet east of lead company's barn, 400 feet west of Gibson's house, 100 feet west of road, 300 feet north of Baptist Church, in limestone ledge; aluminum tablet stamped "1004 ADJ 1903"	1,004.969
Belgrade, 3 miles north of, 80 feet northeast of Johnson's house, 100 feet northwest of ford, north side of north fork of Clear Creek; iron post stamped "912 ADJ 1903"	913.356
Belgrade, 1.5 miles east of, 3 miles west of Caledonia, on east bank of small branch, in large porphyry stone; aluminum tablet stamped "923 ADJ 1903"	924.015
Caledonia, in south stone step, front entrance of Methodist Church; aluminum tablet stamped "923 ADJ 1903"	924.411
Caledonia, 3 miles north of, 300 feet east of crossing of Belgrade-Irondale and Caledonia-Potosi roads, 200 feet west of Newcomb's blacksmith shop, in limestone ledge; aluminum tablet stamped "821 ADJ 1903"	822.479
Potosi, 5 miles south of, 1,000 feet south of Pine Hill, 3 feet west of road, in sandstone bowlder; aluminum tablet stamped "1110 ADJ 1903"	1,111.796

Floyd post office south along highway via Palmer to Crystal Blossom store, thence east to Belgrade.

Levy, 1 mile east of, in southwest corner of foundation stone of Lost Creek Baptist Church, 2.5 feet above ground; aluminum tablet stamped "924 ADJ 1903"	925.014
Palmer, 4 miles north of, in sandstone bowlder where two trails fork; aluminum tablet stamped "Prim. Trav. Sta. No. 217 1,002 ADJ 1903"	1,002.988
Palmer, in southwest corner of foundation stone of post office, 5 feet above ground; aluminum tablet stamped "900 ADJ 1903"	901.683
Sunlight, 4 miles west of, near Crystal Blossom store, 7 feet above good spring which runs out across road 500 feet east of house; aluminum tablet stamped "1021 ADJ 1903"	1,022.135
Sunlight, 0.25 mile south of, in southeast corner of stone foundation of Ramsay Grove Church, 300 feet south of Brock Creek; aluminum tablet stamped "988 ADJ 1903"	989.603
Belgrade, 1.5 miles west of, 2 miles east of Sunlight, south side of Brock Creek, 2 feet above water, in ledge; aluminum tablet stamped "904 ADJ 1903"	905.078

BERRYMAN QUADRANGLE.

Palmer, 3.5 miles southwest of, in flint and limestone bowlder; aluminum tablet stamped "Prim. Trav. Sta. No. 394 1164 ADJ 1903"	1,165.578

Sullivan Quadrangle.

CRAWFORD, FRANKLIN, GASCONADE, AND WASHINGTON COUNTIES.

The elevations in the following list are based on the St. Louis city directrix, the elevation of which is accepted as 413.968 feet above mean sea level by the 1907 adjustment.

The leveling was done by Jesse L. Holman and H. V. Rees, in 1899.

Owing to excessive errors in closure of circuits the elevations in this list are only approximate, excepting for those bench marks along

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the St. Louis & San Francisco Railroad included in the precise level line of 1908.

SULLIVAN QUADRANGLE.

	Feet.
Union; cross mark on northwest corner of stone steps of courthouse	567.72
Krakow, NE. ¼ sec. 8, T. 43 N., R. 1 W., 100 feet northwest of post office; copper nail in root of oak tree	764.15
Casco, NE. ¼ sec. 17, T. 43 N., R. 2 W., in northwest corner of foundation of former post-office building; aluminum tablet stamped "St. L. 781"	782.136
Jeffriesburg, SE. ¼ sec. 25, T. 43 N., R. 2 W., 100 feet southeast of post office; cross mark on large rock	767.39
Cedar Fork, NE. ¼ sec. 19, T. 43 N., R. 3 E., 300 feet west of former post office; nail in root of oak tree	812.09
Port Hudson, SW. ¼ sec. 22, T. 43 N., R. 3 W., 1 mile south of former post office, in foundation of store building at crossroads; aluminum tablet stamped "St. L. 867"	868.318
Beemont, NE. ¼ sec. 23, T. 43 N., R. 4 W., 2.5 miles southeast of post office, in sandstone ledge on State road; aluminum tablet stamped "St. L. 795"	795.82
Drake, SE. ¼ sec. 10, T. 43 N., R. 5 W., in foundation of post-office building; aluminum tablet stamped "St. L. 868"	869.034
Neirer, NE. ¼ sec. 14, T. 42 N., R. 2 W., on bottom step of former post-office building; cross mark	821.343
Shotwell, near center of sec. 7, T. 42 N., R. 3 W., in foundation of former post-office building; aluminum tablet stamped "St. L. 855"	855.614
Bourbois, NE. ¼ sec. 17, T. 42 N., R. 4 W., one-fourth mile west of post office, in foundation of Wortmann's stone building on Springfield Road; aluminum tablet stamped "St. L. 897"	897.62
T. 42 N., R. 5 W., SE. ¼ sec. 23, in foundation of frame house on Springfield road owned by Mr. Holt; aluminum tablet stamped "St. L. 921"	921.755
Stanton, near St. Louis & San Francisco R. R. station, in foundation of hotel building; aluminum tablet stamped "St. L. 872"	872.25
Japan, 3 miles north of, NE. ¼ sec. 19, at northeast corner of junction of crossroads, on main road to Champion City; iron post stamped "St. L. 778"	779.178
Tea, SW. ¼ sec. 8, T. 41 N., R. 4 W., in foundation of T. H. Mathews' store building; aluminum tablet stamped "St. L. 740"	740.887
Bem, near center of sec. 27, T. 41 N., R. 5 W., in yard of post-office building; iron post stamped "St. L. 833"	834.041
Sullivan, near St. Louis & San Francisco R. R. station, in wall of Bennett building; aluminum tablet stamped "St. L. 977"	976.715
Bourbon, near St. Louis & San Francisco R. R. station, in foundation of brick hotel building; aluminum tablet stamped "St. L. 954"	954.502
Oak Hill, NW. ¼ sec. 18, T. 40 N., R. 4 W., in foundation of post-office building; aluminum tablet stamped "St. L. 749"	750.395
Oak Hill, 3.2 miles southeast of, NW. ¼ sec. 22, T. 40 N., R. 5 W., at crossroads on Oak Hill and Jake Prairie Road; iron post stamped "St. L. 964"	965.041
Vilander, NE. ¼ sec. 15, T. 39 N., R. 2 W., 160 yards east of post office, south side of county road; iron post stamped "St. L. 638"	638.363
Leasburg, near the St. Louis & San Francisco R. R. station, in foundation of Exchange Hotel building; aluminum tablet stamped "St. L. 1023"	1,024.87
Cuba, near the St. Louis & San Francisco R. R. tracks, in foundation of Grand Hotel building; aluminum tablet stamped "St. L. 1033"	1,035.244

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	Feet.
Jacobston, 0.1 mile west of post office, NW. ¼ sec. 12, T. 39 N., R. 5 W., in rock bluff 30 feet south of Cuba and Jake Prairie Road; aluminum tablet stamped "St. L. 852"	852.829
T. 38 N., R. 2 W., NW. ¼ sec. 5, at north edge of road, 50 yards west of foundation of Mudd's store building on road from Anthonies Mill to Scotia; iron post stamped "St. L. 868"	868.434
Scotia, 0.2 mile northeast of post office, NE. ¼ sec. 11, T. 38 N., R. 3 W., in limestone bluff at north edge of road to Anthonies Mill; aluminum tablet stamped "St. L. 644"	644.945
T. 38 N., R. 4 W., SW. ¼ sec. 5, 1.8 miles south of Cuba, 25 feet east of St. Louis & San Francisco R. R. track, at road crossing; iron post stamped "St. L. 966"	967.204
Fanning, SE. ¼ sec. 4, T. 38 N., R. 5 W., 15 feet west of platform of St. Louis & San Francisco R. R. station, 10 feet south of track; iron post stamped "St. L. 1059"	1,060.545

Chester (Ill.), Higdon, and Weingarten Quadrangles.

BOLLINGER, MADISON, PERRY, AND STE. GENEVIEVE COUNTIES.

The elevations in the following list are based upon Mississippi River Commission bench marks at Ste. Genevieve and at St. Marys, and upon 1907 adjustment datum.

Most of the leveling was done in 1907 by Edward Bandli. One bench mark on Weingarten quadrangle was established in 1903 by D. V. Vandiver.

The leveling was done in cooperation with the State, and the bench marks are stamped with the State name. There is doubt as to the marking of some of the bench marks.

WEINGARTEN QUADRANGLE.

Ste. Genevieve west along Potosi Road via Zell to point 5.5 miles west of Zell, thence south to Weingarten.

	Feet.
Ste. Genevieve, permanent bench mark 33, in side at southeast corner of public school building, 4 inches from corner in fifth course of stone, center of copper bolt leaded horizontally (the letters "U.S.P.B.M." are cut near bolt)	400.999
Ste. Genevieve, 3.9 miles west of, 300 feet east of forks of road, in large ledge forming south bank of dry creek at forks of Potosi and St. Louis Roads, 100 feet south of road across dry creek; aluminum tablet stamped "476"	476.758
Zell, 500 feet north of, at first intersection north of Zell, in rock between two trees opposite road fork; aluminum tablet stamped "614"	613.897
Zell, 2.7 miles northwest of, 15 feet north of road, top of hill, 3 feet south of fence, in large sandstone ledge; aluminum tablet stamped "607"	609.765
Weingarten, 5 miles north of, 20 feet east of fence, 300 feet south of T road, 5 feet west of road, in ledge of rock; aluminum tablet stamped "587"	587.662
Weingarten, 2.7 miles north of, 30 feet east of T road, 20 feet east of southeast fence corner where oak stands, 0.12 mile from Mr. Repson's house; private road leads to his house; iron post stamped "767"	770.292
Weingarten, in concrete foundation of Illinois Southern Ry. water tank foundation, southwest corner of; aluminum tablet stamped "833"	833.316

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Weingarten northwest to Hickory Creek.

	Feet.
Weingarten, 4.5 miles northwest of, at Hickory Creek ford on Lawrenceville Road, south side of creek, 50 feet south of road, 200 feet southwest of old sawmill, in limestone bluff; bronze tablet stamped "503"	504.813

Weingarten east along road to Staabtown, thence south to Coffman, thence east to Minnith, thence northeast to point 6 miles southwest of St. Marys.

Weingarten, 2.4 miles from, 30 feet south of curve of road to east, 0.1 mile from Brischle house, on ledge of rock on opposite side of dry creek from road; aluminum tablet stamped "606"	606.162
Staabtown, 0.8 mile north of, in front of church, 15 feet south of road leading from church to Weingarten, in ledge of rock; aluminum tablet stamped "475"	475.177
Staabtown, 3.3 miles from, on road to Coffman, 0.2 mile northeast from house and old blacksmith shop, in large rock at intersection of another road from southwest; aluminum tablet stamped "886"	885.726
Staabtown, 5.2 miles south from, 3 miles north of Coffman, on north side of road, north 0.4 mile from house on north side of hill, 200 feet from intersection of roads to northwest, 60 feet from intersection of roads to southeast; aluminum tablet stamped "947"	946.485
Coffman, 0.5 mile from, 33 feet north of road, 15 feet south of fence, in ledge of rock at foot of hill; aluminum tablet stamped "715"	715.445
Coffman, 3.2 miles east of, near Saline Valley R. R. track, 250 feet northeast of road crossing, 60 feet north of road, in ledge of rock; aluminum tablet stamped "558"	563.665
Coffman, 7.1 miles east of, 100 feet north of Saline Valley R. R. track and 140 feet west of road, 180 feet northwest of road crossing, in ledge of rock; aluminum tablet stamped "448"	467.464
Minnith, 960 feet south of, 22 feet east of Saline Valley R. R. track, in ledge of rock 4 feet from cedar tree; aluminum tablet stamped "437"	437.265
Minnith, 1.2 miles from, opposite overhead railroad bridge on private road to northwest, 18 feet southeast of St. Marys Road, 300 feet south of curve of road to east toward St. Marys, 8 feet south of large oak tree; aluminum tablet stamped "416"	417.471
St. Marys, 6 miles southwest of, on north side of road near valley leading north from road, in ledge of rock; aluminum tablet stamped "482"	485.473

Saline Valley south to point near Ulam.

Womack, 7.8 miles from, 2.1 miles from railroad, 36 feet south of gate, 3 feet east of fence; iron post stamped "Prim. Trav. Sta. No. 9, 528"	527.978

HIGDON QUADRANGLE.

Minnith south along road via Silver Lake to Patton, thence west to Castor River, thence north to point near Higdon, thence west to point near Fredericktown, thence northeast to point near Ulam.

Minnith, 6.3 miles south of, 7.7 miles northwest of Silver Lake, halfway up hill, west side of road where road curves to south, 20 feet west of road, 5.4 feet southeast of large oak west of road, in ledge of rock; aluminum tablet stamped "650"	650.406
Silver Lake, 5.6 miles north of, 8.4 miles south of Minnith, near signpost at forks of road, in root of tree; nail	846.06
Silver Lake, 1.8 miles northwest of, 20 feet north of public road, 10 feet west of private road, in northwest corner of intersection, on ledge of rock north of road; aluminum tablet stamped "608"	608.008

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	Feet.
Silver Lake, 0.6 mile south of, 400 feet from center of crossroads, 25 feet east of bunch of trees, 15 feet north of a second bunch of trees, in ledge of rock across small stream from road intersection; aluminum tablet stamped "545"	544.648
T. 34 N., R. 9 E., near center of sec. 14. Tucker's house, 0.1 mile northeast of, 200 feet south of creek, 10 feet from road, 6 feet north of large oak, in ledge of sandstone 3.5 feet northeast of small tree east of road; aluminum tablet stamped "607"	606.565
Silver Lake, 6.9 miles south of, 0.1 mile south of Yount post office, northwest corner of crossroads, in root of tree; nail	627.01
Yount post office, 1.3 miles from, 0.25 mile from Yount's house, 220 feet west of intersection of private road with Fredericktown Road, in ledge of rock opposite side of creek from road; aluminum tablet stamped "609"	610.380
Patton, 4.2 miles from, 0.1 mile southeast of George Regan's house, 30 feet southeast of bridge, 10 feet east of road; aluminum tablet stamped "700"	700.400
Patton, southeast corner of flour mill, in third layer of stone from ground, west side of Main Street; aluminum tablet stamped "Prim. Trav. Sta. No. 8, 605"	604.998
Patton, 2.3 miles from, 300 feet north of road, 90 feet east from spring flowing from ledge of rock, 200 feet north of Schneider's house at private road intersection with Fredericktown Road; aluminum tablet stamped "639"	640.978
Patton, 5.2 miles northwest of, 55 feet west of northwest corner of T road intersection from north, 13 feet south of fence, in large sandstone; aluminum tablet stamped "939"	939.207
Patton, 8.1 miles from, 20 feet north of road, 50 feet northwest of northwest corner of field, where road leaves field, in ledge of rock north of road; aluminum tablet stamped "691"	691.393
Patton, 10.4 miles from, 20 feet east of road at curve uphill to west, in ledge of rock, 300 feet southeast of house; aluminum tablet stamped "686"	685.862
Higdon, 2.5 miles southwest of, 4.6 miles from Fredericktown, 10 feet north of road, near top of hill, 0.25 mile west from house at forks of road, also 0.25 mile east of house on top of hill, in granite ledge; aluminum tablet stamped "910"	910.423
Fredericktown, 3 miles northeast from, 20 feet north of road, 0.12 mile west of Freeland's house, at foot of first small hill west of house, in ledge of rock; aluminum tablet stamped "855"	855.046
Womack, 6.9 miles from, 200 feet north of intersection, 30 feet east of road, in northeast corner of road intersection, east of road; large rock	1,063.94
Womack, 4.4 miles south of, 30 feet north of dry creek, 0.5 mile east of Rydan's house, 3 feet north of road, on large bowlder; aluminum tablet stamped "949"	949.052
Womack, 2.6 miles south of, 1.5 miles north of Hicks, 4.5 feet west of road up Castor, west of road at bend, in large granite bowlder; aluminum tablet stamped "966"	965.503
Johnson, on ridge, 0.4 mile north of, 60 feet north of road, in large bowlder in hill across dry creek from road, where road curves to east foot of hill; aluminum tablet stamped "927"	926.732
Womack, 4 miles from, 0.25 mile from house of Mr. Nation, jr., in ledge on opposite bank of Cold Water Creek from road, 60 feet east from road; aluminum tablet stamped "694"	694.200
Womack, 6.8 miles northeast of, 3 miles from Saline Valley R. R., in west bank of creek, 120 feet west of road, across Cold Water Creek, north of road intersection; aluminum tablet stamped "557"	557.227

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CHESTER QUADRANGLE.[1]

Point 6 miles southwest of St. Marys northeast to St. Marys.

	Feet.
St. Marys, 4.5 miles from, halfway between houses near foot and near top of hill, about 30 feet south of road near edge of bluff, 11 feet southwest of large tree, in ledge of rock on hill; aluminum tablet stamped "466"	468.049
St. Marys, in west end of water table in southwest corner of storehouse belonging to E. S. Tundaugh on northeast corner of Second Walnut Street; copper bolt countersunk about 0.2 inch (5 mm.) in stone, center of bolt leaded horizontally (Mississippi River Commission bench mark No. 35, marked "U. S. P. B. M.")	389.015
St. Marys, in southwest corner of Martin Roundstone's icehouse, on east side of Walnut Street, in fifth course of stone from bottom; center of copper bolt leaded horizontally (Mississippi River Commission bench mark No. 36, stone marked "U. S. B. M.")	395.961

Condray, Edgar Springs, Franks, and Rolla Quadrangles.

DENT AND PHELPS COUNTIES.

The elevations in the following list are based upon a precise level line run in 1908 by E. L. McNair from the United States Army Engineers' bench mark at Labadie, the accepted elevation of which, by 1907 adjustment, is 472.692 feet.

The leveling was done in 1908 and 1909 by C. H. Swift.

ROLLA QUADRANGLE.

Rolla south 9 miles.

	Feet.
Rolla, three blocks north of Grant Hotel, east side of street, in B. L. Knapp's yard; iron post stamped "1130"	1,129.566
Rolla, 1.1 miles southeast of, on Lecoma Road, road fork to northeast, in root of 16-inch black oak tree; nail marked "1107.30"	1,097.11
Rolla, 6.6 miles southeast of, on Lecoma Road, 30 feet west of corner secs. 1, 6, 7, 12, T. 36 N., Rs. 7 and 8, in stone; aluminum tablet stamped "Trav. Sta. No. 8, 1173"	1,172.794
Rolla, 8.1 miles southeast of, on Lecoma Road, dim crossroads, in root of 18-inch black oak tree 15 feet west of road; nail marked "1240.6"	1,230.50

Lecoma southwest 5 miles.

Lecoma, 3 miles south of, at fork of road to south, in root of black-oak tree; nail	1,148.58
Lecoma, 4.3 miles southwest of, on Lecoma and Edgar Springs Road, T road south, in root of 18-inch post-oak tree; nail marked "1129.4"	1,119.30

Point 3 miles northwest of Flat post office to point 6.4 miles northwest.

Flat post office 3 miles northwest of, 200 feet southwest of B. M. Hartung's barn, also 200 feet west of road, north of small ravine, in sandstone ledge; aluminum tablet stamped "1092"	1,092.259
Flat post office, 5.8 miles northwest of, 725 feet north of lane running east to Joiner's house, 40 feet east of road and 2 feet west of rail fence, in sandstone rock 24 by 24 inches, in ravine; aluminum tablet stamped "1086.4"	1,086.408

[1] Only the Missouri elevations for this quadrangle, a part of which is in Illinois, are given here.

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	Feet.
Flat post office, 6.4 miles northwest of, plain road fork to south known as Arlington and Spring Creek Road, signboard "3.5 miles to Spring Creek," 10 feet west of road, in root of 20-inch black-oak tree; nail marked "1119.6"	1,109.58

Clementine northeast to rail oad bridge over Gasconade River.

Arlington, 1.4 miles south of, 300 feet south of small graveyard, 50 feet east of road, in sandstone ledge; aluminum tablet stamped "779"	778.882
Arlington, in east pier of railroad bridge across Gasconade River; aluminum tablet stamped "687"	686.773

Arlington north and east along highways via Gatchel and Oak Grove schoolhouse to Rolla.

Arlington, 1.2 miles northeast of, dim road fork to north, 15 feet south of road, in root of 10-inch sycamore tree; nail marked "684"	684.15
Arlington, 3.9 miles northeast of, in southwest corner of foundation of Gatchel schoolhouse; aluminum tablet stamped "973"	973.170
Wellington, 4.5 miles northeast of, road fork north known as Brickhouse Ford Road, 10 feet southeast of road, in root of 12-inch black-oak tree; nail marked "1002.3"	1,002.40
Arlington, 6.4 miles northeast of, 565 feet southwest of center of sec. 33, T. 28 N., R. 9 W., in sandstone ledge jutting out of point of ridge; aluminum tablet stamped "908"	907.639
Arlington, 9.4 miles northeast of, 2 feet north by 6 feet east of northwest corner of Oak Grove schoolhouse, in sandstone jutting out of ground; aluminum tablet stamped "1006"	1,006.092
Rolla, 5.4 miles northwest of, road fork south at R. A. Collyer's mail box, 5 feet south of road, in root of 10-inch post-oak tree; nail marked "1109"	1,109.439
Rolla, 3.9 miles northwest of, 1,500 feet west of north fork of Beaver Creek, 15 feet south of road, in sandstone ledge; aluminum tablet stamped "1013"	1,013.060

CONDRAY QUADRANGLE.

Point 2.5 miles north of Lecoma to point 2.5 miles southwest of Lecoma.

Rolla, 9 miles southeast of, on Lecoma Road, in sandstone ledge 20 feet east of road, at southwest corner of Will Carson's farm; aluminum tablet stamped "1170"	1,170.319
Lecoma, 1.4 miles north of, on Rolla and Lecoma Road, in root of 14-inch post-oak tree at camp; nail marked "1151.9"	1,141.81
Lecoma, in southeast corner of flour mill; aluminum tablet stamped "1197"	1,196.703
Lecoma, 0.3 mile south of, on Lecoma and Edgar Springs Road, road fork to south, line on ridge road southwest, in root of 12-inch post-oak tree; nail marked "1214.8"	1,204.65
Lecoma, 1 mile southwest of, on Lecoma and Edgar Springs Road, 10 feet south of road, dim crossroads, in root of 12-inch black-oak tree; nail marked "1186.8"	1,176.66
Lecoma, 2 miles southwest of, on Lecoma and Edgar Springs Road, in south side of T road north, east of S. L. Amerson's place, in sandstone rock, 24 by 8 by 5 inches; aluminum tablet stamped "Prim. Trav. Sta. No. 7, 1173"	1,172.974

At point 3.1 miles southeast of Rolla.

Rolla, 3.1 miles southeast of, on Lecoma Road, in front of vacant house, 15 feet west of road; iron post stamped "1073"	1,073.382

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EDGAR SPRINGS QUADRANGLE.

Junction of Horse Creek and Little Piney River to point 3 miles west of Flat.

	Feet.
Lecoma, 5 miles southwest of, on Lecoma and Edgar Springs Road, sec. 21, T. 35 N., R. 8, W. 400 feet southwest of 40-acre corner, 0.3 mile south of northeast corner sec. 21, in sandstone ledge 10 feet north of road; aluminum tablet stamped "1061"	1,061.021
Lecoma, 6.8 miles southwest of, on Lecoma and Edgar Springs Road, road fork to south, first road fork west of Little Piney River, on 14-inch post-oak tree, in root; nail marked "1146.5"	1,136.47
Lecoma, 7.3 miles southwest of, on Lecoma and Edgar Springs Road, road fork to north known as Yancy Mill Road, in root of 18-inch black-oak tree; nail marked "1171.8"	1,161.72
Lecoma, 8.7 miles southwest of, on Lecoma and Edgar Springs Road, dim crossroad running north-south, in root of 16-inch post-oak tree; nail marked "1204.1"	1,194.08
Lecoma, 9.3 miles southwest of, where Lecoma and Edgar Springs and Houston Road forks, 600 feet south of northeast corner of NW. ¼ sec. 30, T. 35 N., R. 8 W., 100 feet northwest of T road west, 10 feet north of small ravine, in sandstone ledge; aluminum tablet stamped "1153"	1,153.438
Houston Road, 1.7 miles west of, 2,000 feet east of Avert Jenkin's residence in top of large sandstone jutting in Corn Creek at ford near fork, in center of stone 10 by 5 feet; aluminum tablet stamped "1057"	1,057.083
Flat post office, 1.2 miles east of, road fork to north known as Edgar Springs and Newburg Road, in root of post-oak tree 10 inches in diameter; nail marked "1145.3"	1,135.31
Flat post office, 0.4 mile southwest of, on Relfe Road, in sandstone ledge 10 feet east of, 150 feet north of road fork, head waters of Mill Creek; aluminum tablet stamped "1116"	1,116.294
Flat post office, 0.9 mile west of, on ridge road to Arlington, road fork to south, 300 feet west of vacant log house known as Main Hotel, in root of 12-inch white-oak tree; nail marked "1175.6"	1,165.60

FRANKS QUADRANGLE.

Clementine.

Clementine post office, 0.8 mile south of, road fork to right, in root of post-oak tree at small white house; nail	1,072.52
Clementine post office, at T road west, 40 feet south by 30 feet west to quarter corner between secs. 3 and 10, T. 36 N., R. 10 W., in sandstone 30 by 14 by 8 inches; aluminum tablet stamped "Prim. Trav. Sta. No. 4, 1058"	1,058.165
Clementine post office, 1 mile northwest of, road fork to east at northwest corner of Slaughter's fence, in root of 18-inch black-oak tree; nail marked "1033.7"	1,023.72

Eldon and Gravois Mills Quadrangles.

MONITEAU, MORGAN, AND MILLER COUNTIES.

The elevations in the following list are based upon an aluminum tablet stamped "1037 VRSLS" in the foundation at the southwest corner of the courthouse at Versailles, the elevation of which is accepted as 1,037.088 feet above mean sea level. The initial points upon which this leveling depends are the triangulation stations "Hunter" and "North Base" of the Coast and Geodetic Survey,

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which are also bench marks on a spur line of its transcontinental precise-level line. The elevations are by the 1907 adjustment.

The leveling was done in 1902 by O. Laurgaard.

GRAVOIS MILLS QUADRANGLE.

Hunter triangulation station along road to north base triangulation station.

	Feet.
Hunter triangulation station (Coast and Geodetic Survey), 4 miles east of Versailles, in surface stone marking station; top of copper bolt	1,048.495
Versailles, on southwest corner of foundation of courthouse; aluminum tablet stamped "1037 VRSLS"	1,037.088
Versailles, 3.5 miles north of, about 300 feet west of bridge 23, in Moreau Creek, on flat stone; aluminum tablet stamped "903 VRSLS"	903.462
Versailles (North Base of the Coast and Geodetic Survey) triangulation station and bench mark	1,057.768

Hunter via Versailles to Gravois Mills.

Gravois Creek, branch of, 150 paces south of McDaniel's house, 57 paces west of road, on north edge of creek; aluminum tablet stamped "818 VRSLS" (set in rock)	817.632
Huhn's store, 1 mile west of, 15 paces northwest of road, in projecting rock beneath an 8-inch tree; bronze tablet stamped "719 VRSLS"	719.514

Gravois Mills to Gladstone.

Gravois Mills, in foundation of J. T. Washburn's store; aluminum tablet stamped "673 VRSLS"	672.953
Gladstone, in foundation of Seydebothan's Hotel; aluminum tablet stamped "614 VRSLS"	614.453

At Proctor. Single Spur line.

Proctor, in front of Talbot's house, in foundation; bronze tablet stamped "652 VRSLS"	651.848

ELDON QUADRANGLE.

Rocky Mount via Barnett to Hunter.

Rocky Mount, opposite post office, in foundation of church; bronze tablet stamped "996 VRSLS"	996.305
Barnett, in front of Beckman's store, in foundation of church; aluminum tablet stamped "917 VRSLS"	916.978

Versailles (North Base) via Olean and Eldon to Rocky Mount.

Excelsior, east of, 50 paces south of road, in creek bed, in large flat rock; bronze tablet stamped "863 VRSLS"	862.661
High Point, in brick front of Tising's store; bronze tablet stamped "904 VRSLS"	903.989
Olean, in brick front of Dr. Allees's drug store; aluminum tablet stamped "770 VRSLS"	770.257
Eldon, in brick front of bank; aluminum tablet stamped "934 VRSLS"	934.218

Eldon to Bagnell and return.

Bagnell, 170 yards northwest of station, 7 yards southeast of switch, 4 paces north of track, in rock; bronze tablet stamped "587 VRSLS"	587.132

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New Madrid 30′ Quadrangle, including Bloomfield, Malden, New Madrid, and Sikeston 15′ Quadrangles.

NEW MADRID COUNTY.

The following elevations are based on a bench mark of the U. S. Army Engineers described as follows: "New Madrid, post set near river bank in woods, 54 meters from river bank, 50 meters from top of bank of St. Johns Bayou, on land of Harry Powers, top of brass cap." The elevation of this bench mark is accepted as 286.970 feet.

The line was run between New Madrid and Malden and return by Leigh D. Townsend in 1908.

NEW MADRID QUADRANGLE.

New Madrid via St. Louis Southwestern Ry. to Malden.

	Feet.
New Madrid, 25 feet south of St. Louis Southwestern Railway, east of north-south street, in water stem to fire hydrant; top of bolt head marked "U. S. B. M. 298.40"	298.385
New Madrid, 0.8 mile west of, between railroad tracks, in top of corner stone; copper bolt; post has letters "U. S." chiseled in top	299.259
New Madrid, 3.6 miles west of, at northeast corner of T roads, 45 feet north of center of track, 20 feet east of center of wagon road running north-south, inside fence 2 feet from corner post; iron post stamped "301"	301.237
Leave track and turn north to Lilbourn:	
Lilbourn, east of station, 315 feet from railroad crossing, at northeast corner of crossroads, in fence corner at southwest corner of field; iron post stamped "285"	284.866
Lilbourn, crossing of St. Louis & San Francisco R. R.; top of rail	286.44
Lilbourn, 1 mile west of, short distance east of Boden, about middle of first bridge west of Lilbourn on north side; top of bolt marked "U. S. B. M. 280.64□"	285.531
Lilbourn, 2.6 miles west of, south side of railroad right of way, 24.8 feet from south rail, 9.5 feet west of milepost 39, in line with telegraph poles; iron post stamped "281"	280.509
Catron, on grounds of old sawmill, just outside of north side of right of way, 50 feet north of center of main track, southwest of patch of woods, west of easternmost house in Catron; iron post stamped "282"	281.709
Como, north of railroad right of way, 47 feet north of center of track, some what west of section house numbered 8, on opposite side of track, in line with cattle guard and right of way fence, in corner formed by fence; iron post stamped "283"	282.613
Parma, 51.5 feet south of center of St. Louis Southwestern Ry. track, 54 feet from center of St. Louis & San Francisco R. R. track, opposite union station, at intersection of west fence of St. Louis & San Francisco R. R. right of way and south fence of St. Louis Southwestern Ry. right of way, just inside fence on athletic grounds; iron post stamped "281"	281.305
Hyman, east of, 49 feet north of center of track in right of way of St. Louis Southwestern Ry., in corner formed by right of way fence and fence running out from cattle guard; iron post stamped "281"	280.688
Malden, 3.1 miles northeast of, 43 feet southeast of southeast corner of railroad bridge over ditch No. 4, 80 feet east of center of ditch No. 4, east of and along south edge of St. Louis Southwestern Ry. right of way, just outside of right of way of ditch No. 4; iron post stamped "279"	279.413

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	Feet.
Malden, 2 miles northeast of, northwest of mile sign 56 on telegraph pole at east end of bridge No. 138-A, on top of bridge stringer on north side at east end of bridge 138-A, last bolthead on top; marked "U. S. B. M. 282.56"	282.49
Malden, directly across street from city hall, north side of Main Street, about 200 feet east of four-corners, west of livery barn belonging to W. B. Bladsoe, in concrete foundation of brick office building belonging to Doctors E. T. Penny, E. T. Van Cleve, and E. M. Edwards, south side in southeast corner about 1.5 feet above ground; aluminum tablet stamped "294"	294.043

Palmyra Quadrangle.

LEWIS, MARION, MONROE, RALLS, AND SHELBY COUNTIES.

The elevations in the following list are based upon Mississippi River Commission permanent bench mark No. 12, at West Quincy, a copper bolt leaded horizontally in the third course of masonry from bottom and ninth from the top of the west abutment of the Quincy, Omaha & Kansas City Railroad bridge, in north face, 2 inches from east corner. The elevation of this bench mark is 477.810 feet by the 1907 adjustment. In 1902 this leveling was checked by connecting with United States permanent bench mark No. 16, at Hannibal, the accepted elevation of which is 489.436 feet.

The leveling was done in 1901 and 1902 by H. V. Rees.

PALMYRA QUADRANGLE.

West Quincy west along railroad via Maywood to Dunham.

	Feet.
West Quincy (Mississippi River Commission P. B. M. No. 12), in third course of masonry from bottom and ninth from top of west abutment of Quincy, Omaha & Kansas City R. R. bridge, in north face, 2 inches from east corner, center of copper bolt leaded horizontally	477.810
West Quincy, on northeast corner of station platform	483
Taylor, in northwest corner of station platform; copper nail	490.96
Maywood, at southwest corner of station platform; copper nail	518.51

Maywood along highway south to Hester and west to Naomi.

T. 59 N., R. 6 W., in southern part of NW. ¼ sec. 18, 0.3 mile east of Hester, in sixth tier of stone from top of south abutment of wagon bridge over South Fabius River; bronze tablet stamped "511 Q"	510.722

Hester south along highway to Palmyra.

Palmyra Junction, in southeast corner of station platform; copper nail	652.88
Palmyra Junction, in front of station; top of inside rail	651.9

Palmyra along railroad to Woodland, thence south along highway to Rensselaer and east to Ely.

T. 57 N., R. 6 W., in southeastern part of NW. ¼ sec. 8, at Woodland, in southeast corner of stone foundation of brick schoolhouse; bronze tablet stamped "685 Q"	685.304
Woodland, in front of station; top of rail	681.3
West Ely, in front of post office, at foot of hitching post; cross on large rock	718.58
Rensselaer, in southwest corner of station platform; copper nail	734.15

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	Feet.
Rensselaer, in front of station; top of rail	734.3
Huntington, in northwest corner of station platform; copper nail	729.07
T. 56 N., R. 6 W., in center of SW. ¼ sec. 8, in front of stone, under porch, in northeast foundation stone; bronze tablet stamped "727.5 Q"	727.830
Ely, in southwest corner of station platform; copper nail	735.54
Ely, in front of station; top of inside rail	735.1
T. 56 N., R. 7 W., in north part of NE. ¼ sec. 2, in north face of stone foundation of house; bronze tablet stamped "729 Q"	728.842

Ely north along highway via Mount Vernon, Emerson, and Naomi, to Durham.

T. 57 N., R. 7 W., 100 yards east of southwest corner of sec. 15, Mount Vernon, in southwest stone of coping around church; bronze tablet stamped "664 Q"	663.764
T. 58 N., R. 7 W., at northeast corner of SE. ¼ sec. 29, at crossroads, in south face of stone foundation near southwest corner of schoolhouse; bronze tablet stamped "695 Q"	695.423
Philadelphia, in southeastern part of NE. ¼ sec. 12, T. 58 N., R. 8 W., in northeast corner of stone foundation of Baptist Church; aluminum tablet stamped "711 Q" (on spur not checked)	711.056
Emerson, center of NE. ¼ sec. 29, T. 59 N., R. 7 W., in southeast corner of stone foundation of Christian Church; bronze tablet stamped "672 Q"	672.046
Naomi, in front of post office, in northeast corner of platform; copper nail.	566.86
Durham, in southwest corner of station platform; copper nail	647.13
Durham, in front of station; top of rail	646.8

Durham along highway east to Argola, thence south to Nelsonville.

Argola, in front of post office, about 6 feet from southwest corner; cross on large stone	703.92
Nelsonville, in front of post office; cross on northeast corner of step	716.23

Naomi west along highway to Nelsonville.

Benbow, at west end of step in front of post office; cross on stone	693.63

Nelsonville south along highway via Cherrydell and Emden to Lakeman.

Cherrydell, in northwest corner of NW. ¼ sec. 30, T. 59 N., R. 8 W., in stone foundation of west side of post office, 7.5 feet north of southwest corner; bronze tablet stamped "695 Q"	694.685
Emden, in front of post office, in southeast corner of platform; copper nail.	745.50
Emden, in southwest corner of NW. ¼ sec. 25, T. 58 N., R. 9 W., in southwest corner of stone foundation under Christian Church; bronze tablet stamped "743 Q"	743.221

Cherrydell northwest via Sigsbee toward Elgin (single spur line).

Sigsbee, in west part of SE. ¼ sec. 14, T. 59 N., R. 9 W., in south side of stone foundation of house owned by D. J. Bevill; bronze tablet stamped "739 Q"	739.454
T. 59 N., R. 10 W., SW. ¼ NW. ¼ sec. 12, in southwest corner of stone foundation of T. G. Moore's house; bronze tablet stamped "756 Q"	755.608

Sigsbee southwest along highway via Burkesville (single spur line).

Burkesville, in northeast part of SE. ¼ sec. 1, T. 58 N., R. 10 W., in northeast corner of stone foundation of Charles Buckingham's house; aluminum tablet stamped "749 Q"	749.468

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Ely west along Chicago, Burlington & Quincy R. R. to point west of Lakenan (single spur line).

	Feet.
Monroe City, in southeast part of NE. ¼ sec. 13, T. 56 N., R. 8 W., in north face of stone coping of First Baptist Church; bronze tablet stamped "748 Q"	748.117
Hunnewell, in southeast corner of station platform; copper nail	757.89
Hunnewell, in front of station; top of rail	757.9
Lakenan, in northwest corner of station platform; copper nail	732.20
Lakenan, in front of station; top of inside rail	732.4
T. 56 N., R. 10 W., at west side of NE. ¼ sec. 1; iron post stamped "747 Q"	752.691

Lakenan northwest 2.5 miles (single spur line).

T. 57 N., R. 10 W., in west side of SE. ¼ sec. 36, in west face of stone foundation under J. Clark's house; bronze tablet stamped "739 Q" (Fly levels from Emden gave elevation 6 feet less)	744.980

Hunnewell northwest 2.3 miles (single spur line).

Hunnewell in south part of NW. ¼ sec. 12, T. 57 N., R. 9 W., in southwest corner of stone foundation of A. C. Spalding's drug store; bronze tablet stamped "758 Q"	758.687
T. 57 N., R. 9 W., at southeast corner SW. ¼ sec. 35; iron post stamped "754 Q"	754.165

Hunnewell northeast 1.5 miles (single spur line).

T. 57 N., R. 8 W., in south part of SW. ¼ sec. 31, 1.5 miles northeast of Hunnewell, in north face of stone foundation of James McClintock's house; bronze tablet stamped "754 Q"	754.452

Hunnewell southwest along highway toward Hawkins and southeast toward Stoutsville.

T. 55 N., R. 10 W., at northwest corner of NE. ¼ sec. 1; iron post stamped "691.5 Q"	691.691
T. 55 N., R. 9 W., in central part of NE. ¼ sec. 5, in ledge of rock about 20 feet east of road; bronze tablet stamped "697 Q"	697.532

Monroe City southeast via Hatch to Cincinnati.

T. 55 N., R. 8 W., in northeast part of NE. ¼ sec. 1, in ledge of rock on creek bank about 100 yards from road; bronze tablet stamped "650 Q"	650.432
T. 55 N., R. 7 W., in northeast part of SW. ¼ sec. 2, in northeast corner of stone schoolhouse; bronze tablet stamped "723 Q"	723.205
Cincinnati, in northeast corner of SW. ¼ sec. 8, T. 55 N., R. 6 W., in east face of stone foundation of Methodist Church; bronze tablet stamped "527 Q"	527.024

Woodland east along railroad via Oakwood to Hannibal.

Withers Mill, northeast corner of station platform; copper nail	607.80
Bear Creek, southeast corner of station platform; copper nail	587.30
Oakwood, Chicago, Burlington & Quincy R. R. station, at southeast corner of platform; copper nail	510.89
Oakwood, Missouri, Kansas & Texas Ry. station, southeast corner of station platform; copper nail	507.67
Permanent bench mark No. 16, copper bolt leaded horizontally in face of natural rock at east entrance of tunnel at Missouri end of railroad bridge at Hannibal. Bolt is in rock facing east and on south side of tunnel, 7 feet south of entrance and about 4 feet above road level	489.436

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Dunnellson, Edina, Kahoka, and Pulaski Quadrangles.

ADAIR, CLARK, KNOX, LEWIS, MACON, SCHUYLER, AND SCOTLAND COUNTIES.

The elevations in the following list were previously published on pages 107–111, Bulletin 185, and are based on a bench mark of the U. S. Corps of Engineers (Mississippi River Commission), at Alexandria, in sec. 8, T. 64 N., R. 5 W. The bench mark, an eyebolt in top of mooring stone at boat landing, and its elevation, as corrected by the 1907 adjustment of the Coast and Geodetic Survey, is accepted as 493.605 feet above mean sea level.

Most of the leveling was done in 1900 by H. V. Rees. The line from La Plata to Gibbs was run in 1905 by D. V. Vandiver.

KAHOKA QUADRANGLE.

	Feet.
Weber, T. 60 N., R. 6 W., in west part of NE. ¼ sec. 7, on east side of large brick house of J. W. Willows, commonly known as "Old Tate Place," in stone foundation; bronze tablet stamped "615 A"	616.092
Ewing, T. 60 N., R. 7 W., SE. ¼ sec. 7, in east face of solid stone foundation of Reformed Lutheran Church; bronze tablet stamped "687 A"	688.364
T. 60 N., R. 8 W., quarter corner east side of sec. 10, on property of William Jusfram; iron post stamped "681 A"	682.208
T. 60 N., R. 9 W., in north part of SE. ¼ sec. 8, on place of W. E. Piner, at side of road under hedge fence north of gateway; iron post stamped "681 A"	681.732
T. 61 N., R. 6 W., in northern part of SE. ¼ sec. 20, on east side of large brick house owned by Eliza Glavin, in stone casing over cellar window; bronze tablet stamped "640 A"	640.111
Lewiston, T. 61 N., R. 8 W., sec. 17, on bank building at southeast corner of Main and Elm Streets; aluminum tablet stamped "725 A"	725.863
La Belle, T. 61 N., R. 9 W., sec. 5, in northwest corner of stone foundation of bank; aluminum tablet stamped "738 A"	738.336
T. 62 N., R. 6 W., near northwest corner of sec. 29, in northwest corner of yard of M. L. Spalding; iron post stamped "637 A"	636.561
T. 62 N., R. 7 W., about center of SE. ¼ sec. 16, 40 feet west of lane to L. E. Moore's house, on north side of road at foot of choke cherry tree; iron post stamped "671 A"	671.058
Bunker Hill, T. 62 N., R. 8 W., SE. ¼ sec. 11, in southeast corner of dooryard of George Nelson; iron post stamped "701 A"	701.858
T. 62 N., R. 9 W., northeast part of sec. 20, in southeast corner of dooryard of H. P. Gregory; iron post stamped "674 A"	675.067
T. 63 N., R. 6 W., sec. 6, schoolhouse No. 1, in southeast corner of stone foundation; bronze tablet stamped "538 A"	537.741
Derrahs, T. 63 N., R. 7 W., SW. ¼ sec. 27, on north side of road, in fence corner southeast of schoolhouse; iron post stamped "609 A"	609.426
Williamstown, T. 63 N., R. 8 W., SE. ¼ sec. 20, in west side of stone foundation of Southern Methodist Church; bronze tablet stamped "721 A"	722.757
T. 63 N., R. 9 W., quarter corner west side of sec. 28, at northeast corner of crossroads, on property of J. A. Arthur; iron post stamped "709 A"	710.260
T. 63 N., R. 10 W., near center of sec. 23, 0.5 mile southeast of Colony, in north face of stone foundation of H. S. Coleman's house; bronze tablet stamped "745 A"	746.032
Alexandria, T. 64 N., R. 5 W., sec. 8, in top of mooring stone at boat landing; eyebolt (Mississippi River Commission bench mark No. 5)	493.602

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	Feet.
T. 64 N., R. 6 W., near northwest corner of sec. 8, at crossroads, in stone step of west door of Fox River Church; aluminum tablet stamped "533 A"	532.883
Antioch, T. 64 N., R. 7 W., SE. ¼ sec. 20, in northwest corner of Elwell's store; bronze tablet stamped "698 A"	698.010
Neeper, T. 64 N., R. 8 W., center of sec. 21, in southeast corner of church yard; iron post stamped "730 A"	730.990
Fairmount, T. 64 N., R. 9 W., SW. ¼ sec. 21, in northeast corner of public square; iron post stamped "780 A"	780.663
St. Francisville, T. 65 N., R. 6 W., SW. ¼ sec. 3, 1 block northwest of post-office, in southwest corner of H. C. Campbell's residence; aluminum tablet stamped "536 A"	542.362
Kahoka, in front of station; top of inside rail	697.4
Kahoka, T. 65 N., R. 8 W., sec. 24, at southwest corner of county courthouse, in window ledge; aluminum tablet stamped "704 A"	705.017
Medill, in front of station; top of inside rail	703.7
Medill, T. 65 N., R. 8 W., sec. 16, 450 feet west of crossing of Chicago, Burlington & Quincy R. R. and Atchison, Topeka & Santa Fe Ry., in masonry around signal post; aluminum tablet stamped "703 A"	704.116
Luray, T. 65 N., R. 9 W., in SE. ¼ sec. 10, in northwest corner of Baptist Church foundation; bronze tablet stamped "746 A"	746.564
Granger, sec. 2, T. 65 N., R. 10 W., in southwest corner of foundation of Granger Exchange Bank; bronze tablet stamped "761 A"	761.596
Revere, T. 66 N., R. 7 W., in NW. ¼ sec. 28, in middle of south side of stone foundation of Hotel Revere; aluminum tablet stamped "682 A"	683.635
T. 66 N., R. 8 W., quarter corner south side of sec. 28, in southwest corner of dooryard of J. O. Murphy; iron post stamped "713 A"	713.855
T. 66 N., R. 9 W., quarter corner west side of sec. 28, on property of J. S. Snyder; iron post stamped "733 A"	734.130

DUNNELLSON 15′ QUADRANGLE.

T. 66 N., R. 10 W., 0.1 mile east of northwest corner, in fence corner on property of Joseph Miller; iron post stamped "745 A"	746.149

EDINA QUADRANGLE.

La Plata, foundation stone under first window north of southeast entrance to savings bank; aluminum tablet stamped "934 ADJ 1904". (Set in 1905 on double line from Glasgow to Gibbs)	933.610
T. 61 N., R. 10 W., southwest corner of NW. ¼ sec. 9, at northeast corner of crossroads; iron post stamped "696 A"	696.547
T. 61 N., R. 11 W., SE. ¼ sec. 9, in corner of Robert Hysell's dooryard; iron post stamped "735 A"	735.891
T. 61 N., R. 12 W., at southwest corner sec. 17, 200 yards east of road, in corner of door yard of J. C. Beck; iron post stamped "855 A"	855.715
T. 61 N., R. 13 W., in southwest corner sec. 11, in corner of dooryard of Thomas Powers; iron post stamped "874 A"	874.829
Gibbs, SW. ¼ sec. 12, T. 61 N., R. 14 W., in northwest face of Gibbs Savings Bank; aluminum tablet stamped "910 A"	910.933
Knox City, southeast of center of sec. 28, T. 62 N., R. 10 W., in west side of Cater and Hunsaker's store; aluminum tablet stamped "766 A"	766.115
Edina, sec. 18, T. 62 N., R. 11 W., in front of station; top of rail	733.9
Edina, NW. ¼ sec. 19, T. 62 N., R. 11 W., 50 feet east of stand in public square, in meridian post; aluminum tablet stamped "814 A"	814.661
T. 62 N., R. 12 W., in west center of NE. ¼ sec. 21, about 30 yards south of railroad track, in road corner; iron post stamped "842 A"	842.152

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	Feet.
Brashear, in center of NW. ¼ sec. 24, T. 62 N., R. 13 W., in casing of east window on north side of schoolhouse; aluminum tablet stamped "868 A".	868. 725
T. 62 N., R. 14 W., in NE. ¼ sec. 22, in corner of road adjacent to property of G. M. Leo; iron post stamped "921 A"	921. 553
T. 63 N., R. 11 W., in southeast corner of SE. ¼ of sec. 6, in corner of dooryard of property of M. Beck; iron post stamped "777 A"	778. 180
T. 63 N., R. 12 W., near northwest corner sec. 9, in west face of stone foundation of James McWilliams's house; aluminum tablet stamped "845 A"	846. 116
Adair, NE. ¼ sec. 20, T. 63 N., R. 13 W., in west face of brick foundation of Catholic parish house; aluminum tablet stamped "926 A"	926. 871
Clay, NW. ¼ sec. 34, T. 63 N., R. 14 W., about 80 yards east of post office, near large oak tree; iron post stamped "931 A"	931. 738
T. 64 N., R. 10 W., in south part of SW. ¼ sec. 28, in southwest corner of dooryard of property of Mary Boyer; iron post stamped "652 A"	652. 989
Sandhill, center of sec. 33, T. 64 N., R. 11 W., 200 yards from post office, in brick foundation of house of S. P. Childers; aluminum tablet stamped "802 A"	803. 490
T. 64 N., R. 12 W., center of SW. ¼ sec. 7, in corner of dooryard of William Purvis; iron post stamped "837 A"	837. 372
Hazelville, south of center of SW. ¼ sec. 35, T. 64 N., R. 13 W., corner of road on Fred Fraser's property; iron post stamped "870 A"	871. 268
Willmathsville, northwest quarter corner on east side of sec. 25, T. 64 N., R. 14 W., at southeast corner of Union Church; iron post stamped "939 A"	939. 315
Memphis, in front of station; top of inside rail	757
Memphis, sec. 7, T. 65 N., R. 11 W., in schoolhouse yard, in top of meridian post; bronze tablet stamped "786 A"	787. 069
T. 65 N., R. 12 W., in south part of NW. ¼ sec. 25, in northwest corner of Miller schoolhouse yard; iron post stamped "796 A"	797. 116
T. 65 N., R. 13 W., in south part of NE. ¼ sec. 3, in corner of S. B. Pile's orchard; iron post stamped "855 A"	855. 840
T. 65 N., R. 14 W., in east part of SW. ¼ sec. 26, at southeast corner of crossroads, adjacent to property of J. N. Cannon, in large stone; bronze tablet stamped "829 A"	830. 305
T. 66 N., R. 11 W., near center of sec. 34, adjacent to land owned by W. H. Summers; iron post stamped "760 A"	761. 397
T. 66 N., R. 12 W., southwest part of NW. ¼ sec. 33, on John Ridges's property, in northeast corner of crossroads; iron post stamped "790 A"	790. 501
Downing, NW. ¼ sec. 33, T. 66 N., R. 13 W., in foundation of store opposite station; bronze tablet stamped "875 A"	875. 511

PULASKI QUADRANGLE.

T. 66 N., R. 14 W., near center of NE. ¼ sec. 26, at northeast corner of church; iron post stamped "900 A"	900. 917

Atlanta, Glasgow, Macon, Moberly, Shelbina, and Shelbyville Quadrangles.

HOWARD, KNOX, MACON, MONROE, RANDOLPH, AND SHELBY COUNTIES.

The elevations in the following list are based upon the Missouri River Commission bench mark at Glasgow, from which a double-rodded line was run during 1905 along the railway via Higbee, Moberly, Macon City, and Laplata to Gibbs in Adair County, connecting

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there with levels brought from the Mississippi River Commission bench mark of the United States Army Engineer Corps at Alexandria.

The leveling was done in 1905 by D. V. Vandiver. Additional work was done in 1906 in the Atlanta and Macon quadrangles by F. H. West.

The standard bench marks are stamped with the letters "ADJ" in addition to their figures of elevation.

GLASGOW QUADRANGLE.

Glasgow along Chicago & Alton R. R. to Higbee.

	Feet.
Glasgow, at west side of second pier from southeast abutment of railroad bridge, copper bolt in bench mark stone set 3.5 feet under ground: above and concentric with the bolt, was set an iron pipe with 10-inch flange at bottom and cap at top (now missing), terminating in rounded knob which is also taken as a permanent bench mark (159 47–3)	[1] 618.034
Steinmetz, 100 feet southeast of station, in northwest corner of stone foundation of post office; aluminum tablet stamped "800 ADJ 1905"	799.818
Armstrong, 100 feet south of station, in southwest corner of stone curbing of station platform; aluminum tablet stamped "832 ADJ 1905"	831.784
Howard County and Randolph County line, 0.25 mile west of, 0.25 mile east of mile post "Chi. 368, St. L. 199," in northeast corner of concrete foundation bridge D 3677; aluminum tablet stamped "835 ADJ 1905"	834.910
Yates, 0.8 mile east of, 20 feet north of track, bottom of 20-foot embankment, in top of second culvert stone from end; aluminum tablet stamped "816 ADJ 1905"	815.493
Higbee, in northeast corner of foundation of C. W. Williams's jewelry store, 170 feet east of Missouri, Kansas & Texas Railway building is on southeast corner of streets; aluminum tablet stamped "886 ADJ 1905"	886.101

MOBERLY QUADRANGLE.

Higbee along Wabash R. R. to Cairo.

Elliott, 700 feet north of station, in northwest base of foundation stone of culvert; aluminum tablet stamped "857 ADJ 1905"	856.858
Moberly, in southeast corner of express office adjoining Wabash station, 4 feet north of south edge of foundation, bench mark faces tracks; aluminum tablet stamped "872 ADJ 1905"	871.953

MACON QUADRANGLE.

Cairo along Wabash R. R. to Macon.

Cairo, in north face of Bank of Cairo, 4 feet west of east edge; aluminum tablet stamped "864 ADJ 1905"	864.290
Jacksonville, 300 feet west of tracks, in south front 6 feet west of east edge of bank building, north side of Randolph Street; aluminum tablet stamped "868 ADJ 1905"	867.670
Excello, 360 feet southwest of station, 200 feet west of tracks, in wall of Powell's drug store; aluminum tablet stamped "871 ADJ 1905"	870.713
Macon, 3.5 miles south of, 600 feet east of railroad, 150 feet east of public road, in small graveyard on Grant's farm, in base stone of Grant monument; aluminum tablet stamped "849 ADJ 1905"	849.015

[1] Subsurface elevation of copper bolt in stone.

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	Feet.
Macon, courthouse, in limestone foundation 3 feet east of southwest corner, 20 feet west of south entrance; aluminum tablet stamped "875 ADJ 1905"	874.450
Macon City, bronze tablet in meridian stone courthouse yard, 100 feet southwest of south entrance of courthouse; stamped "873 ADJ 1905"	873.028

Clarence west along Chicago, Burlington & Quincy R. R. to Macon.

Clarence, 150 feet south of station, south side of park, 70 feet northwest of Shelby County State Bank, 70 feet north of Parlor drug store; iron post stamped "823 ADJ 1905"	823.530
Anabel, 70 feet south of east end of station, 40 feet north of E. I. Hogen's store; iron post stamped "838 ADJ 1905"	838.126
Anabel, 3 miles west of, sec. 1, northwest corner of road crossing; iron post stamped "837 ADJ 1905"	837.019
Macon, 3 miles east of, on northeast corner of stone abutment of bridge over small stream, bridge numbered 67.67, 0.25 mile east of road crossing; aluminum tablet stamped "784 ADJ 1905"	784.026

Clarence south along roads to Duncans Bridge, thence southwest to Cairo.

T. 57 N., R. 12 W., southwest corner of sec. 33, 3.5 miles south of Clarence road crossing; iron post stamped "787 ADJ 1905"	787.284
Enterprise, T. 57 N., R. 12 W., southeast corner of sec. 17, at road crossing; iron post stamped "811 ADJ 1905"	811.626
Enterprise, 3 miles south of, on Marion-Shelby county line, in northwest corner of T in roads; iron post stamped "808 ADJ 1905"	808.210
Duncans Bridge post office, in southeast corner of F. Wedding's yard, west side of road; iron post stamped "717 ADJ 1905"	717.141
T. 55 N., R. 12 W., northeast corner of NW. ¼ NE. ¼ sec. 30, in corner of field at southwest corner of junction of T roads, 2 feet southwest from center curve post in wire fence, 15 feet from either fence, property of J. T. Mitchell, post 100 yards northeast of east of house; stamped "777 ADJ 1905"	777.031
Ash post office, T. 55 N., R. 12 W., center of sec. 31, in northeast corner of Hickory Grove Baptist Church yard, 35 feet northeast of northeast corner of church, 2 feet from wire fence on east side of yard and 5 feet southwest from 3-foot oak tree; iron post stamped "812 ADJ 1905"	811.637
T. 55 N., R. 13 W., northwest corner of SW. ¼ sec. 35, 5.25 miles east by 0.5 mile north of Cairo, in corner of field at L in road, 10 feet east from 12-inch persimmon tree, 12 feet southeast from corner post of fence line, 0.12 mile west from F. Ingram's house (vacant); iron post stamped "812 ADJ 1905"	820.958
T. 54 N., R. 13 W., northeast corner of sec. 6, 3 miles east of Cairo, northeast corner of C. E. Woods yard, southwest corner of junction of T roads, in corner of fence, 2 feet from either fence; iron post stamped "836 ADJ 1905"	836.393
Cairo, T. 54 N., R. 14 W., quarter corner on west side sec. 2, in Bank of Cairo, 4 inches west of east edge and 4 feet above ground; aluminum tablet stamped "864"	864.290

Enterprise via Cox post office to Jacksonville.

T. 56 N., R. 13 W., southeast corner sec. 13, in southwest corner of W. N. Trussell's yard, 3 feet from either side of angle of fence line; iron post stamped "781 ADJ 1905"	780.911
Cox post office, T. 56 N., R. 13 W., northwest corner of SW. ¼ SW. ¼ sec. 20, near northeast corner of Fairview Church; iron post stamped "833"	833.187

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	Feet.
T. 55 N., R. 13 W., southeast part of NE. ¼ sec. 7, 3.8 miles east by 0.25 mile north of Jacksonville, in southwest corner of D. R. Haliburton's yard, at northeast corner of junction of T roads; iron post stamped "811".	810.788
Jacksonville, sec. 10, T. 55 N., R. 14 W., in bank, 4 inches from east edge and 4 feet from ground; aluminum tablet stamped "867"	867.670

ATLANTA QUADRANGLE.

Macon along Wabash R. R. to La Plata.

Macon, 3.5 miles north of, at northwest corner of road crossing; iron post stamped "887 ADJ 1905"	886.938
Axtell, 200 feet west of track, 200 feet north of wagon road, in southwest corner of foundation of house of A. L. Epperson; aluminum tablet stamped "895 ADJ 1905"	894.476
Axtell, 2 miles north of, 100 feet west of track, at public-road crossing and railroad crossing, on land of B. J. Simmons, inside of fence corner; iron post stamped "901 ADJ 1905"	900.516
Atlanta, 12 feet south of Atlanta State Bank, corner of street and alley in northwest corner stone of foundation of Attleberry brick building; aluminum tablet stamped "902 ADJ 1905"	902.233
Love Lake, 200 feet west of station, in southeast corner of foundation of post office; aluminum tablet stamped "915 ADJ 1905"	914.587
La Plata, 2.5 miles south of, at road crossing, 2 feet inside of field; iron post stamped "937 ADJ 1905"	937.275

Love Lake east along public roads via Sue City to Pleasant Grove School.

Love Lake, 3.8 miles east of, sec. 35, T. 60 N., R. 14 W.; iron post stamped "885 ADJ 1905"	884.476
Sue City, in east side of southeast corner foundation stone of Baptist Church; aluminum tablet stamped "871 ADJ 1905"	870.539
Sue City, 3.5 miles east of, T. 60 N., R. 13 W., line between secs. 36 and 25, 0.25 mile east of Sailing Creek, 0.25 mile south of Asa Blanchard's dwelling; iron post stamped "768 ADJ 1905"	768.157

Anabel north to Sue City.

T. 57 N., R. 13 W., 0.25 mile north of center of sec. 4, 12 feet from south end of tall hedge, 8 feet from west edge of road; iron post stamped "841 ADJ 1905"	841.895
T. 58 N., R. 13 W., middle of east boundary of SW. ¼ sec. 16, on north side of road, 50 feet southeast from southeast corner of house, opposite junction of T roads, 4 feet from fence around yard; iron post stamped "849 ADJ 1905"	848.851
T. 59 N., R. 13 W., middle of south boundary of sec. 33, northeast corner of junction of crossroads, 5 feet from edge of either road, in southwest corner of S. S. Ingersoll's yard, 60 feet from southwest corner of house; iron post stamped "836"	836.225
T. 59 N., R. 13 W., northeast corner of sec. 20, at southwest corner of crossroads, 7 feet from edge of either road, 3 feet northeast from corner post in wire fence around field; iron post stamped "825 ADJ 1905"	825.298

SHELBYVILLE QUADRANGLE.

Pleasant Grove school southeast along highway to Plevna, thence south to Shelbina.

Pleasant Grove schoolhouse, district No. 3, 4 miles north of Cherry Box post office, opposite C. J. Mote's and J. E. Douglas's mail boxes, 60 feet west of schoolhouse, at road forks; iron post stamped "849 ADJ 1905"	848.470

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	Feet.
Plevna, 6 miles west of, 200 feet east of road turning south to Clarence, 100 feet southeast of Washington schoolhouse, southeast corner of schoolhouse yard; iron post stamped "830 ADJ 1905"	829.781
Plevna, 3 miles west of, in northwest corner of Rhodes schoolhouse yard, district No. 2; iron post stamped "801 ADJ 1905"	801.026
Plevna, 1.5 miles south by 0.5 mile west of, 700 feet south of Shelby County and Knox County line, northwest corner sec. 2, in northwest corner of foundation stone of Hickman's house; aluminum tablet stamped "791 ADJ 1905"	791.452
T. 58 N., R. 11 W., southeast corner of sec. 2, 5 miles northwest of Shelbyville, 300 feet east of O'Brien Chapel, in northeast corner stone O'Brien schoolhouse; aluminum tablet stamped "788 ADJ 1905"	788.519
T. 58 N., R. 11 W., southwest corner of sec. 5, 3 miles northwest of Shelbyville, in southwest corner of Wm. Werter's house; aluminum tablet stamped "785 ADJ 1905"	784.833
Shelbyville, in foundation stone of courthouse, 2 feet east of south entrance; aluminum tablet stamped "774 ADJ 1905"	774.348
Shelbyville, 3.5 miles southwest of, sec. 8, T. 57 N., R. 10 W., T road, primary traverse station 7; iron post stamped "762 ADJ 1905"	762.383

Pleasant Grove Schoolhouse south along public roads to Clarence.

Cherry Box, 0.25 mile south of, 120 feet northwest of Mennonite Church, inside of field east of road; iron post stamped "838 ADJ 1905"	838.031
Cherry Box, 3 miles south of, on northeast corner of crossroads on property of Alex Brown; iron post stamped "835 ADJ 1905"	834.596
Hagers Grove, 1 mile north of, in southwest corner of yard of Grove schoolhouse, district No. 1; iron post stamped "797 ADJ 1905"	795.848
Hagers Grove, 1.5 miles southwest of, in pear orchard opposite Withrell's house; iron post stamped "769 ADJ 1905"	769.019
Clarence, 2.5 miles north by 0.5 mile east of, southeast corner of field, 2 feet from fence corner, at turn west in road; iron post stamped "803 ADJ 1905"	802.487

SHELBINA QUADRANGLE.

Shelbina along Hannibal & St. Joseph Ry. to Clarence.

Shelbina, opposite west end of station, directly opposite Waverly Hotel; iron post stamped "780 ADJ 1905"	779.661
Lentner, 1.25 miles east of, 4.5 miles west of Shelbina, 70 feet south of track, east end of wedge-shaped piece of ground owned by Mr. Coopwriter; iron post stamped "789 ADJ 1905"	788.935
Lentner, 1.5 miles west of, T. 57 N., R. 12 W., sec. 19, 56 feet north of track, in southwest corner of F. A. Hall's orchard; iron post stamped "791 ADJ 1905"	791.119
T. 57 N., R. 12 W., sec. 23, 2.8 miles east of Clarence, 110 feet south of track, 2 feet south of public road; iron post stamped "790 ADJ 1905"	790.058

Cassville, Forsyth, and Springfield 30′ Quadrangles.

BARRY, CHRISTIAN, STONE, AND TANEY COUNTIES.

The elevations in the following list are based upon the Coast and Geodetic Survey bench mark "CIX" at Monett, the elevation of which is accepted as 1,302.480 feet above mean sea level as determined by the 1907 adjustment. The elevations also agree with

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Arkansas levels based upon a double line to Denver from a Coast and Geodetic Survey bench mark at Seligman.

The leveling was done in 1904 and 1905 by D. V. Vandiver. Additional work was done in the Forsyth quadrangle in 1906 by F. W. Hughes.

The standard bench marks are stamped "ADJ 1903" in addition to the figures of elevation.

CASSVILLE QUADRANGLE.

Monett east along St. Louis & San Francisco R. R. to Marionville, thence along highway to point 3 miles east (double line).

	Feet.
Monett, bottom of a square cut in stone foundation of brick building at northeast corner of Broadway and Third Street, under first window north of corner on Third Street, Commercial Bank; marked "U. S. □B. M."	1,302.480
Verona, opposite Farmers Bank, in southwest corner of William Spalding's one-story brick building, occupied by McShaw (druggist), in stone foundation; aluminum tablet stamped "1273 ADJ 1903"	1,273.377
Aurora, in foundation stone of Bank Saloon, corner of Olive and Madison Streets, under first window north of entrance on Madison Street; aluminum tablet stamped "1371 ADJ 1903"	1,370.629
Marionville, 3 miles west of, 600 feet east of milepost 266, 70 feet east of county road crossing, on abutment stone southwest corner of trestle; aluminum tablet stamped "1395 ADJ 1903"	1,395.312
Marionville, 300 feet east of station, in northeast corner of abutment of trestle 2636; aluminum tablet stamped "1351 ADJ 1903"	1,351.480
Marionville, 3 miles east by 0.5 mile south of, in northeast corner of stone foundation of W. P. Oldham's house; aluminum tablet stamped "1373 ADJ 1903"	1,372.866

FORSYTH QUADRANGLE.

Point 3 miles east of Marionville southeast to Hurley, thence south to Oak Grove post office.

School, 1 mile north by 1 mile west of, in stone foundation of porch of T. S. Wood's house; aluminum tablet stamped "1305 ADJ 1903"	1,305.170
School, 200 feet east of center of road crossing, in stone foundation, 8 feet east of southwest corner; aluminum tablet stamped "1344 ADJ 1903"	1,344.779
Hurley, 2 miles southeast of, in northeast corner stone of foundation of J. B. Blissett's house; aluminum tablet stamped "1276 ADJ 1903"	1,276.447
Otto, 2.5 miles north of, 0.5 mile north of Cram Creek, 100 feet east of road, in limestone bluff; aluminum tablet stamped "1115 ADJ 1903"	1,115.024
Otto, 2.25 miles southwest of, 200 feet west of house, 120 feet north of Wilson Branch, 100 feet north of road by spring box, in large limestone bowlder; aluminum tablet stamped "987 ADJ 1903"	987.379
Galena, in northwest corner of jail, 1.5 feet above ground; aluminum tablet stamped "1019 ADJ 1903"	1,019.116
Galena, 4 miles east of, 4 miles north of Reeds Spring, in southwest corner of stone foundation of fourth district schoolhouse; aluminum tablet stamped "1024 ADJ 1903"	1,024.296
Reeds Spring, 200 feet southwest of mill, 160 feet south of railroad, 100 feet south of road, in rear of a one-story house, in limestone bowlder; aluminum tablet stamped "1179 ADJ 1903"	1,179.194
Oakland schoolhouse, in southwest corner of, 3.5 miles southwest of Reeds Spring; aluminum tablet stamped "1380 ADJ 1903"	1,380.290

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Radical post office, 1 mile southeast of, 0.25 mile north of Mayberry Ferry, in southeast corner of stone chimney of Thomas's house; aluminum tablet stamped "783 ADJ 1903"	Free. 783.571

Blue Eye along highway east to Pinetop, thence south to Omaha.

Blue Eye, 1 mile north of, at T in roads, in southeast corner of stone foundation of Rube Butler's house; aluminum tablet stamped "1291 ADJ 1903"	1,291.916
Blue Eye, 5.6 miles north of, forks of roads to Galena and Cedar Valley, opposite blacksmith shop, in sandstone chimney of J. D. Bowman; aluminum tablet stamped "1302 ADJ 1903"	1,302.280
Cedar Valley, to right of entrance to cellar of Wells's house, in sandstone foundation of; aluminum tablet stamped "821 ADJ 1903"	821.966

Pinetop east along highways to Mincy, thence north to Forsyth, thence northwest via Walnut Shade to Spokane, thence southwest to Reeds Spring.

Pinetop, 1 mile southeast of, 400 feet east of Turkey Creek, 200 feet from road crossing, in limestone ledge; aluminum tablet stamped "1124 ADJ 1903"	1,124.720
Mincy, 2.8 miles west of, in saddle in ridge, 50 feet north of forks, in 10-ton standstone bowlder; aluminum tablet stamped "1243 ADJ 1903"	1,243.301
Mincy, 300 feet east of post office, in foundation of W. T. Moore's house; aluminum tablet stamped "914 ADJ 1903"	914.412
Mincy, 2.5 miles north of, 10 feet west of road, in limestone rock; aluminum tablet stamped "790 ADJ 1903"	790.076
Forsyth, 3.5 miles south of, 4 feet west of road, in limestone bowlder; aluminum tablet stamped "923 ADJ 1903"	923.136
Forsyth, northeast corner of courthouse; aluminum tablet stamped "695 ADJ 1903"	696.191
Walnut Shade, 250 feet north of Bull Creek, opposite post office; iron post stamped "758 ADJ 1903"	758.560
Reno, 6 feet south of road, opposite post office; iron post stamped "965 ADJ 1903"	965.814
Spokane, 5 feet east of public road, northwest corner of Joe Choat's store, T. 25, R. 22, sec. 13; iron post stamped "1342 ADJ 1903"	1,342.902
Tauria, 12 feet west of pond, opposite blacksmith shop; iron post stamped "1378 ADJ 1903"	1,378.917

Forsyth north along public roads to Chadwick and along St. Louis & San Francisco R. R. to Sparta.

Forsyth, 3 miles north of, 2 miles south of Dickens post office, in little flat 4 feet west of road, in limestone; aluminum tablet stamped "949 ADJ 1903"	949.341
Taneyville, northeast corner of foundation of J. N. Ray's store; aluminum tablet stamped "1079 ADJ"	1,078.831
Taneyville, 3.25 miles north of, 200 feet east of Swan Creek, 40 feet south of small creek crossing, in bowlder; aluminum tablet stamped "841 ADJ 1903"	841.310
Garrison, 0.25 mile south of, 100 feet south of fifth ford of Swan Creek, in ledge; aluminum tablet stamped "876 ADJ 1903"	876.518
Garrison, 2.5 miles north of, bottom of Chadwick Hill, 2 feet east of road, in limestone; aluminum tablet stamped "961 ADJ 1903"	961.110
Chadwick, in northwest corner of foundation of oil warehouse, 100 feet south of and across railroad track from station, opposite Simpson's store; aluminum tablet stamped "1378 ADJ 1903"	1,377.336
Lees station (Oldfield post office), 0.25 mile south of, 7 feet north of track, in ledge; aluminum tablet stamped "1384 ADJ 1903"	1,383.373

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	Feet.
Sparta, 300 feet north of station, 50 feet east of track, in southwest corner of foundation of flour mill; aluminum tablet stamped "1399 ADJ 1903"...	1,398.301
Spokane north along public roads to Ozark.	
Highlandville, in southwest corner of foundation of building containing post office and Major's store; aluminum tablet stamped "1383 ADJ 1903".	1,382.818
Highlandville, 3.5 miles north of, 1.5 miles south of Sellmore, in northwest corner of chimney of W. M. Kings's house; aluminum tablet stamped "1337 ADJ 1903".....	1,336.394
Ozark, 3 miles south of, on west bank of Elk Creek, forks of road, at spring, in limestone; aluminum tablet stamped "1168 ADJ 1903".....	1,167.761
School northeast via Jamesville to Riverdale.	
School, 3 miles northeast of, Union Ridge Church, in foundation, 13 feet north of southeast corner; aluminum tablet.....	1,297.424
Jamesville, 0.6 mile east of, 0.14 mile east of road fork, 300 feet west of 3-foot oak post in field, 15 feet south of road, overhanging limestone bluff, 30 feet north of road; aluminum tablet.....	1,043.062
Riverdale, flour mill on Finley Creek, limestone ledge, opposite mill, 10 feet south of west end of dam across Finley Creek; aluminum tablet...	1,071.421
SPRINGFIELD QUADRANGLE.	
Sparta along St. Louis & San Francisco R. R. to Ozark.	
McCracken, 60 feet south of track, in north foundation of A. M. Candle's store; aluminum tablet stamped "1380 ADJ 1903".....	1,379.205
Ozark, in northwest corner of foundation of courthouse; aluminum tablet stamped "1178 ADJ 1903".....	1,177.000
Riverdale northeast to Ozark.	
Riverdale, 2.8 miles east of, 300 feet north of turn in road, 20 feet east of A. L. Porter's spring house; in top of ledge of limestone; aluminum tablet.....	1,151.766

Joplin District.

JASPER COUNTY.

The elevations in the following list are based on bench mark "CIII" of the Coast and Geodetic Survey at Carthage, at the southwest corner of Main and Limestone streets. The bench mark is a cross cut on the rounded top of a 6 by 6 inch limestone post buried in the ground 2.3 feet west of intersection of inside lines of sidewalk. The elevation of this bench mark, as corrected by the 1907 adjustment of that Survey, is accepted as 942.000 feet above mean sea level.

The leveling was done in 1904 by D. C. Wray.

All bench marks dependent upon this datum are stamped with the letters "CRTHG" in addition to the figures of elevation.

This list includes only the Missouri portion of the levels; for additional work in the same area see results of spirit leveling in Kansas (Bulletin 472).

JOPLIN DISTRICT.

	Feet.
Carthage, at southwest corner of Main and Limestone streets; limestone post (Coast and Geodetic Survey bench mark "CIII").....	942.000

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	Feet.
Carthage, at west side of City Park, east side of Harrison Avenue, 45 feet north of north line of Chestnut Street, in south Meridian post; aluminum tablet stamped "1009 CRTHG"	1,008.916
Oronogo, SE. ¼ sec. 36, T. 29 N., R. 33 W., on Central Avenue, in capstone at north wing wall at west abutment of steel viaduct over Missouri Pacific Railway; aluminum tablet stamped "975 CRTHG"	975.291
T. 28 N., R. 33 W., northwest corner of sec. 6, 1 mile northwest of Carl Junction, 100 feet east of crossroads; iron post stamped "884 CRTHG"	884.283
Duenweg, T. 27 N., R. 32 W., southeast corner of sec. 4, 0.5 mile west of hotel, at corner of fence northwest of crossroads; iron post stamped "1075 CRTHG"	1,075.241
T. 26 N., R. 33 W., northwest corner of sec. 9, 10 feet south of corner of fence southeast of Seneca and Box Springs crossroads; iron post stamped "1142 CRTHG"	1,141.806
T. 29 N., R. 34 W., 1 mile east of Waco, northeast corner of sec. 13, 60 feet west and 30 feet south of cornerstone; iron post stamped "868 CRTHG"	868.460
Alba, T. 29 N., R. 32 W., NW. ¼ sec. 15, in southwest corner of schoolhouse grounds; iron post stamped "984 CRTHG"	984.338
Pleasant View Church, T. 29 N., R. 31 W., southeast corner sec. 12, at east end of gate into yard; iron post stamped "1006 CRTHG"	1,006.265
Webb City, at west side of Allen Street, between Main and Daugherty Streets, in northeast corner of Exchange Bank Building; aluminum tablet stamped "1003 CRTHG"	1,003.320
T. 27 N., R. 31 W., northeast corner of sec. 1, on south line of east-west road, 210 feet west of west line of north-south road; iron post stamped "1074 CRTHG"	1,073.995
T. 26 N., R. 31 W., northeast corner of sec. 1, on west line of north-south road, 25 feet south of south line of east-west road; iron post stamped "1160 CRTHG"	1,160.089
T. 26 N., R. 32 W., northeast corner of sec. 1, on south line of east-west road, 15 feet west of west line of north-south road; iron post stamped "1137 CRTHG"	1,136.743
Joplin, at southeast corner of Virginia Avenue and Seventh Street, in northwest corner of courthouse foundation; aluminum tablet stamped "1009 CRTHG"	1,008.486

Aurora Special Quadrangle (Carthage and Greenfield 30′ Quadrangles, and Aurora, Monett, and Ritchey 15′ Quadrangles).

JASPER AND LAWRENCE COUNTIES.

The elevations in the following list are based on bench marks of the Coast and Geodetic Survey at Sarcoxie and on those of the United States Geological Survey at Aurora and Marionville.

The leveling was done by G. P. Featherstone in 1909.

AURORA SPECIAL QUADRANGLE.

Aurora east along St. Louis & San Francisco R. R. to Logan, thence north and west along highways to Sarcoxie.

	Feet.
Aurora city hall, on north side of building, east of entrance, top of lower stone step; aluminum tablet stamped "1395 MO"	1,394.653
Aurora, in foundation stone of Bank Saloon, corner of Olive and Madison Streets, under first window north of entrance on Madison Street; aluminum tablet stamped "1371 ADJ 1903"	1,370.629

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	Feet.
Aurora, 1.5 miles east of, 150 feet east of road crossing at Bonanza mine, 40 feet north of railroad track, in corner of right of way fence; iron post stamped "1402"	1,402.048
Marionville, 3 miles west of, 600 feet east of milepost 266, 70 feet east of county road crossing, on abutment stone southeast corner of trestle 2656; aluminum tablet stamped "1395 MO"	1,395.212
Marionville, 3 miles west of, 600 feet east of mile post 266, 70 feet east of county road crossing, on abutment stone southwest corner of trestle 2656; tablet (all that remains of this tablet is the shank, the plate having been destroyed; this bench mark should not be used in adjusting line)	1,395.312
Marionville, 300 feet east of station, in northeast corner of abutment stone of trestle; aluminum tablet stamped "1351 ADJ 1903"	1,351.480
T. 27 N., R. 25 W., on corner stone to secs. 14, 15, 22, and 23, at T road north	1,342.08
Honey Creek schoolhouse, 200 feet west of corner to secs. 15, 16, 21, and 22, T. 27 N., R. 25 W., on south side of road; iron post stamped "1295 MO"	1,294.669
Aurora, 3.5 miles north of, at northwest corner of T road west, 20 feet east and 20 feet south to corner secs. 24–25 (east corner), T. 27 N., R. 26 W.; iron post stamped "Prim. Trav. Sta. No. 13 1909 MO 1280"	1,279.631
T. 27 N., R. 26 W., cross on corner stone of secs. 22, 23, 26, and 27; at cross-roads	1,296.822
Aurora, 3 miles west by 5 miles north of, 10 feet east of corner to secs. 15, 16, 21, and 22, T. 27 N., R. 26 W.; iron post stamped "1200 MO"	1,199.970
Aurora, 6 miles west by 5 miles north of, 20 feet north of road; iron post stamped "1258 MO"	1,258.260
Mount Vernon, 5.5 miles south of, at the Thomas Hillhouse farm, set at west end of T road east; iron post stamped "Prim. Trav. Sta. No. 14 1909 MO 1191"	1,191.100
T. 27 N., R. 27 W., on stone at corner of secs. 23, 24, 25, and 26	1,268.45
Mount Vernon, point 5 miles south by 3 miles west of, 30 feet northeast of corner of secs. 21, 22, 27, and 28, T. 27 N., R. 27 W.; iron post stamped "1295 MO"	1,295.118
Freistatt, 1 mile north by 2 miles west of, at northeast corner of crossroads, 15 feet south and 35 feet west to west corner secs. 19–30, T. 27 N., R. 27 W., 45 feet south and 35 feet west to east corner secs. 24 and 25, T. 27 N., R. 28 W.; iron post stamped "Prim. Trav. Sta. No. 15 1909 MO 1296"	1,295.652
T. 27 N., R. 28 W., 100 feet west of quarter corner of secs. 15 and 22; in root of hickory tree; nail	1,292.03
Clarkson, 1 mile east of, 25 feet southeast of corner of secs. 15, 16, 21, and 22, T. 27 N., R. 28 W.; iron post stamped "1256 MO"	1,255.697
Clarkson, 1 mile north by 1 mile west of, 20 feet east of corner of secs. 7, 8, 17, and 18, T. 27 N., R. 28 W. (T road west); iron post stamped "1211 MO"	1,210.770
T. 27 N., Rs. 28 and 29 W., 15 feet west of corner of secs. 7, 12, 13, and 18, in root of hickory tree; nail	1,216.85
Sarcoxie, 2.5 miles east of, 25 feet north of corner of secs. 10, 11, 14, and 15, T. 27 N., R. 29 W.; iron post stamped "1162 MO"	1,162.275
T. 27 N., R. 29 W., 30 feet southeast of corner of secs. 9, 10, 15, and 16, in root of black-oak tree; nail	1,167.50
Sarcoxie, in upper surface of lower stone step of brick building owned and occupied by the Bank of Sarcoxie, on southeast corner of block opposite northeast corner of public square; bottom of a cut surrounded by letters "U. S. B. M." and "U. S. C. & G. S." The inscription "Altitude above Gulf of Mexico 1088 Ft." is also cut in the stone step	1,089.591

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Logan north and west along highways via Mount Vernon and Stotts to Sarcoxie.

	Feet.
Marionville, 2 miles east by 3 miles north of, 20 feet northeast of west corner of secs. 18 and 19, T. 27 N., R. 24 W., on Lawrence County and Christian County line; iron post stamped "1431 MO"	1,430.657
Marionville, 2 miles east by 5.7 miles north of, on Lawrence County and Christian County line, 30 feet southwest of T road east; iron post stamped "1278 MO"	1,278.127
Ts. 27 and 28 N., R. 25 W., quarter corner of secs. 1 and 36, 10 feet southwest of, point painted on sandstone bowlder	1,307.72
Marionville, 2 miles east by 6 miles north of, 1,000 feet southwest of east corner of secs. 24 and 25, T. 28 N., R. 25 W., 10 feet north of road, in limestone rock; aluminum tablet stamped "1180 MO"	1,180.195
Chesapeake, 1 mile east of, 25 feet southeast of corner of secs. 21, 22, 27, and 28, T. 28 N., R. 25 W.; iron post stamped "1291 MO"	1,291.106
Chesapeake, 2 miles west of, at southwest corner of T road west on range line, 20 feet north by 20 feet east of east corner of secs. 24 and 25, T. 28 N., R. 26 W.; iron post stamped "Prim. Trav. Sta. No. 2 1909 MO"	1,371.648
Mount Vernon, 1.8 miles north of, on west side of north and south road at T road west, 15 feet west by 5 feet north of center of T road; iron post stamped "Prim. Trav. Sta. No. 3 1909 MO 1265"	1,265.544
Mount Vernon, 1 mile north by 0.9 mile west of, on north side of road; iron post stamped "1223 MO"	1,222.664
Big Spring Church, 50 feet northeast of road forks, in tree root; nail	1,115.71
Big Spring Church, 0.5 mile northwest of, 0.2 mile north of junction of Williams Creek and Spring River, on south side of road; iron post stamped "1103 MO"	1,103.441
Stotts City, 1 mile north of, at northwest corner of crossroads, 15 feet south and 40 feet east of corner of secs. 23, 24, 25, and 26, T. 28 N., R. 28 W.; iron post stamped "Prim. Trav. Sta. No. 4 1909 MO"	1,169.541
Stotts City, 2 miles north of, 50 feet southwest of corner of secs. 13, 14, 23, and 24, T. 28 N., R. 28 W., in tree root at T road west at corner; nail	1,112.48
Stotts City, 2 miles north by 2 miles west of, 20 feet southeast of corner of secs. 15, 16, 21, and 22, T. 28 N., R. 29 W.; iron post stamped "1078 MO"	1,078.639
Russell station, 1.5 miles east by 0.5 mile south of, in northwest corner of pasture at southeast corner of T road east, 30 feet west and 20 feet north of west corner of secs. 18 and 19, T. 27 N., R. 28 W., 35 feet west and 20 feet north of east corner of secs. 13 and 24, T. 28 N., R. 29 W.; iron post stamped "Prim. Trav. Sta. No. 51 1909 MO 1145"	1,145.086
T. 28 N., R. 29 W., 30 feet southeast of corner of secs. 15, 16, 21, and 22; iron post stamped "1030 MO"	1,030.134
Ts. 27 and 28 N., R. 29 W., 75 feet northeast of corner of secs. 3, 4, 33, 34; iron post stamped "1154 MO"	1,154.645

Dearborn and Leavenworth Special (Leavenworth 15′ and Kansas City 30′) Quadrangles.

PLATTE COUNTY.

The elevations in the following list are based on bench marks of the Missouri River Commission in accord with the 1907 adjustment. The leveling was done in 1906 by S. K. Atkinson.

LEAVENWORTH SPECIAL (KANSAS CITY 30′) QUADRANGLE.

At Waldron.

	Feet.
Waldron, on west side of county road, 350 feet east of tracks of Chicago, Burlington & Quincy R. R., 300 feet north of Methodist Episcopal church, in 7-ton sandstone bowlder; aluminum tablet stamped "781"	781.212

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LEAVENWORTH SPECIAL (LEAVENWORTH 15') QUADRANGLE

Leavenworth via Beverly Junction to Platte City, thence southeast via Hampton to 2.5 miles northeast of Waldron.

	Feet.
Beverly, 2,000 feet east of station, 75 feet north of tracks, at point where wagon road crosses tracks; iron post stamped "773"	772.369
Beverly, 3 miles east of, on Chicago, Rock Island & Pacific Ry., at crossing 100 feet west of bridge 646, on south side of tracks and west side of wagon road; iron post stamped "804"	803.545
Platte City, 1,000 feet east of Tracy station, on Chicago, Rock Island & Pacific Ry., 50 feet north of tracks, in front of Adam Glebb's store; iron post stamped "778"	777.359
Platte City, 3 miles southeast of, on Liberty wagon road at crossroads, corner opposite park schoolhouse; iron post stamped "970"	969.770
Hampton, 1 mile west of, at crossroads, near Elm Grove, red brick church on southwest corner of James Wallace's land; iron post stamped "1002"	1,002.067
Waldron, 2.5 miles northeast of, where road running south from H. Searer's place turns off to Waldron, at junction of three roads near E. F. Neiman's farm; iron post stamped "924"	923.841

Platte City north to New Market.

Platte City, 4 miles from station, on main north-south pike, at crossroads, on corner of C. P. Ballard's farm, southeast corner of sec. 36, T. 54 S., R. 35 E.; iron post stamped "916"	915.680

New Market West to Iatan.

Dye, 600 feet south of post office, northeast corner of J. McCalley's place on north-south road; iron post stamped "901"	901.355
Dye, 2 miles east of, 1 mile north of, at junction of east-west and north-south roads, at southwest corner of W. H. McCalley's place; iron post stamped "1056"	1,056.312

DEARBORN QUADRANGLE.

At New Market.

New Market, 75 feet south of station, 30 feet west of tracks; iron post stamped "869"	868.722

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